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Marketing—Problem of Intermountain Beekeepers

By C. L. Corkins, University of Wyoming

MARKETING is the big problem facing intermountain beekeepers today. It is true that if by some magic stroke we could eliminate American foulbrood, the most serious of our production problems, we would reduce our cost of production from a quarter to one-half a cent per pound and make it possible to realize some profit from our investment. However, as soon as this or any other production problem is solved and the cost of production lowered, the fact still remains that each individual commercial producer is in competition with every other commercial producer, which would tend to bring the market price down again to the cost of production. Today the cost of production per pound in the mountain states is probably as low as anywhere else in the United States. It varies from 5½ to 8 cents per pound, the average running about 7½ cents. With the present market price of honey running between 6½ and 7½ cents per pound, it is no wonder that large numbers of commercial producers are hunting winter jobs. This year we are all marginal producers or lower. In the economic order of things, such a situation cannot last long. Somebody is going to have to quit the business. If the marketing problem is not solved for the intermountain region, a good agricultural industry, which should be bringing in good returns to our territory, is going on the rocks.

Ours is 90 per cent an export proposition from commercial beekeepers to bottlers and blenders, jobbers and wholesalers, in the 120-pound domestic or export case. Our markets are not close at hand; in fact they are so far off that the beekeeper does not at the present time concern himself much about what happens to his honey after he loads it in the freight car. In Wyoming we probably have as high a local consumption of honey per capita as anywhere else in the Union, but we have only 200,000 people and from four to five million pounds of honey! So our friends who tell the beekeeper how to sell his honey directly to the consumer, especially from each individual producer to the consumer, have missed the solution of our problem a mile.

Many suggestions have been forthcoming among our beekeepers as to the solution of our own peculiar problem. Perhaps the most common is the idea of pooling all of the white and water-white honey of the territory and marketing it in a more orderly fashion. Undoubtedly the reason for this is the success of such a plan with certain other agricultural products, notably, tobacco, raisins, walnuts and broomcorn. Certain features of this idea are no doubt economically sound. Others are not, and I think that it is a realization of this upon the part of some commercial beekeepers that has held back progress in this regard. It is my purpose to point out some of the pitfalls in such a scheme, and if someone can show us the way around them, well and good.

First of all, to make a pool work, we must get a reasonable control of the product, or some particular grade of the product, that the trade cannot get along without. Some will argue that such is true with the white and water-white honey of the intermountain region. But I wish to call attention to the fact that we produce only 10 per cent of the honey of the Union. Also it must be remembered that the blenders grade down the color scale, and while water-white honey may be desirable in their operations, it is not absolutely necessary. Furthermore, each year finds the Middle West producing more and more light amber and white honey which is available to the blenders. Perhaps no one knows just what percentage of the nation's crop is light amber or better, but surely more than half. If so, then 15 or 20 per cent of this in one pool is hardly commanding. In addition to all of this, it must be remembered that there are relatively few large honey bottlers in America, but that those few are in keen competition one with the other. Each is trying to get onto the market as cheaply as possible, and some will be willing to sacrifice quality somewhat to be able to buy honey at a lower figure outside of our white honey pool. In other words, it seems possible for the bottlers and blenders to operate without buying a large percentage of the intermountain honey.

Second, in order to get a successful pool, the producers must be geographically, socially and economically closely inter-related. The very vastness of the intermountain country, and the geographical segregation of our beekeepers stand as great barriers against close organization. Of course, under the present conditions of obtaining credit at a cheap rate of interest from the federal intermediate credit banks, either through bonded warehouses or a cooperative marketing association, it is not necessary to aggregate the honey crop. It may be left in the producer's honey house, and marketed from there by the association. But the fact still remains that we do not know one another, and we are so far apart from one another that any close social or economic communion is difficult to obtain. The beekeepers of one state view with suspicion the well-meaning efforts of those of another. Even a continental divide within one state has probably been responsible for ill-feelings of the bee-

keepers on one slope against those of the other. Before the individual is willing to cast his fortune with the whole, he must know and trust the whole. Disloyalty, indifference and misunderstanding have killed more cooperatives than any other single factor.

Third, a pool may be successful if for no other reason than because the product is marketed in an orderly fashion and can take advantage of a spread in price at different seasons of the year which has been caused by the disorderly dumping of the product on the market. It is certainly true that our honey has not been marketed—it has just been dumped. A correction of this condition in itself would doubtless help. Just how much, we cannot venture a guess until it is tried. We do not have figures over a long enough period of years to accurately estimate the spread in price of honey for the various seasons of the year. However, in going over the market figures of the Bureau of Agricultural Economics, those for 1923-4 seem to be fairly representative. During that year those beekeepers in the intermountain region who sold their crop in March instead of letting it go before the first of October realized on the average one cent a pound more. Now, without the expense of a selling organization, with the cheapest rate of interest that could have been obtained through federal credit, it would cost three-eighths of a cent a pound to have held that honey crop for the additional cent the market brought. For the 1925-26 season, beekeepers holding the crop would have been three-eighths of a cent or more in the red.

Now we have not discussed two other fundamental points to the success of marketing through a pooling or any other system, which are financing and management. These will not be dwelt upon, because they are not insurmountable. If they were, we would waste our time looking for a method of solving our marketing problem.

After reading this, the fact still sticks in the craw of our beekeepers that at present the majority of the buyers are playing the quotations of one producer against those of another. That condition is undeniable. For the benefit of the buyers, we are now staging a ruthless battle among ourselves to see who can produce for the lowest figure or who is willing to maintain the lowest standard of living so that we can undersell our neighbor and move our honey crop.

By way of introduction to what is to follow, I want to make an emphatic statement that I hope intermountain beekeepers will lie awake nights and think about. Here it is: **The present curse of the intermountain beekeeper is the exclusive use of the sixty-pound can.**

Correlated with the above statement is the idea that if we are to realize more for our honey we must radically change our present system of marketing. We are obsessed with the idea out here in the West that we have a superior grade of honey. If so, we are not now realizing upon that fact, nor are we likely to, by marketing our crop in a wholesale manner to a limited trade. But there must be some way that we can cash in on our superior article. It looks as though the only way to do so is for us to follow our honey right on through to the consumer. But in order to save money for the beekeeper by such a system, it will have to be shown that we can set up a cheaper system of distribution than that which now obtains in the regular channels of trade.

The plans of an experimental organization of this nature have been worked out in Wyoming and the proposal given the final going over at the convention of the Wyoming Beekeepers' Association in December. Already a sufficient amount of capital stock has been pledged in one county to make the scheme look like it would go over. The Sheridan County Beekeepers' Association, with Mr. R. D. Chamberlain as the leader in this project, is officially fostering the idea and has put it over big with the home folks.

The proposal takes the form of a cooperative marketing corporation with capital stock organized under our present state cooperative marketing law. Some of the outstanding features of this law are:

1. Only actual producers can hold voting stock in the company.
2. Each stockholder has only one vote, regardless of shares owned.
3. Individuals are not liable for the indebtedness of the corporation in excess of their capital stock.
4. Dividends exceeding 6 per cent per annum are barred.
5. Profits in excess of the 6 per cent dividends must be distributed on a basis of the percentage of business done with the individuals regardless of the stock held.

The plan is to establish a honey packing plant and a sales organization in some large eastern or middle western city. Only white and water-white Wyoming honey will be shipped to this plant. Here it will be heated and put up in tin lithographed cans. It will not have to be blended or bottled in glass. The quality of our honey is such that it will not need to be blended. The lithograph designs on the tin containers which we have, are, to our minds, far more attractive than honey itself in glass bottles. They constitute a radical departure from the usual type of honey labels, and are a vital part of the scheme.

The sales force will essentially be a wholesale establishment. As such the salesman will deal directly with the retail merchants. We are therefore taking over and managing for ourselves the regular channels of distribution as far as the retail stores, rather than depending upon

Where North Dakota Beemen Meet

The Agricultural Building at the University at Fargo, North Dakota, where beekeeping is taught by J. A. Munroe. The apiary shown on the opposite page is just back of this building.

the channels of trade now in existence.

We are satisfied that this system of marketing will get our honey in its original state onto the market at a lower cost of distribution than the present practice, chiefly for four reasons:

1. We will have no blending charge. This is where we will cash in on the superiority of our honey as to quality and constancy of color, grade and flavor. It is not necessary to blend the great majority of Wyoming honey, statements by some to the contrary notwithstanding. At least 90 per cent of our honey will grade white or better. We defy the trade to be able to discriminate between our white and water-white, both from the standpoint of color and flavor. Our honey will go to the canning plant graded by a state grading system with the federal grade of white or better. It will then be necessary only to heat for canning purposes and to protect against early granulation. This eliminates the expensive process of blending and the necessity of buying here, there and everywhere. Only relatively inexpensive heating and canning machinery is necessary. Furthermore, it should be remembered that this plant will be operated by the producer, with no thought of its paying dividends more than an increased basic price for the honey.

2. After arrival at the canning plant, the only additional transportation expense will be a small trucking charge to the retailer's store. The average bottler and blender has an additional transportation charge to the points of final distribution. Each canning unit in our case will be operated only for the city in which it is located.

3. The bottler and blender may have two brokerage charges to make against the honey—i. e., one in purchasing and the other in selling. We will have none.

4. The average wholesaler's commission in handling honey in the regular channels of trade will take care of all our expense of operation.

We propose to make a modest beginning as an experimental measure, and if it pays on a small basis, it is bound to pay when the volume of business is increased. It will be started on a six carlot basis, or approximately 200,000 pounds. With this amount of honey, we can get onto the market for 16½ cents a pound for the five-pound lithographed pail, and 18½ cents for the 2½-pound can. This will still give the producer 8½ cents for his honey, with his cans and cases returnable.

The only unanswerable question in the whole deal then resolves itself into one of whether or not we can move 200,000 pounds of honey in one city of three-quarters of a million inhabitants or more. In an analysis of this question, it is found that one salesman will have to move an average of sixty pounds of honey per month in each of the retail stores which he can visit. This, we think, is highly probable, and with a very conservative view of the possibilities one could hardly see it in any other light. Right here in Laramie one grocery store has been moving this fall six hundred pounds a month from one producer, and this honey has set on the shelves in competition with outside honey quoted at a lower figure.

Of one thing we are sure: Our present marketing system is a dismal failure from the standpoint of the intermountain producer. If this article does nothing more than set us to thinking along different lines of marketing, I shall not feel too guilty of being an amateur pointing into a future on a plan whereof we have no facts of actual experience upon which to base our conclusions.

Summary of Beekeeping In Alabama For 1926

By Winford A. Ruffin

Alabama claims the distinction of producing more queens and package bees within a radius of fifty miles of Montgomery, the capital city of the state, than any other like area in the world. Queens produced in Alabama are sold in most of the states and provinces of North America. These sales are growing each year. This is shown by figures taken from the reports of the State Apiary Inspector, as follows:

Year	Queens Sold	Packages Sold
1924	136,000	18,000
1925	180,000	30,000
1926	190,000	40,000

The seasons in Alabama are such that the shipping season coincides with the time that queens and packages are needed in the northern states to replace those lost during the winter. The figures given above surely speak well for Alabama bees, and as for the beekeepers themselves, they are honest, modern in their methods, and dependable.

There is very little disease found in this state. The apiary inspector and his work is supported by rigid regulations and quarantine. Foulbrood is burned wherever it is found. The number of colonies infected with foulbrood in this state at present is less than one-fourth of one per cent.

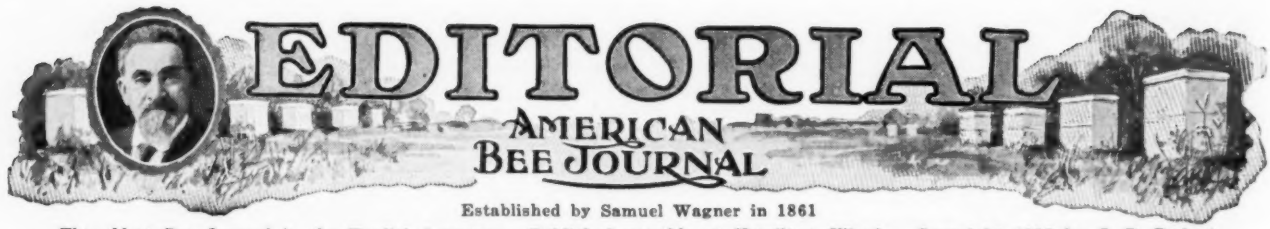
Year	Colonies inspected	Diseased colonies
1924	20,000	125
1925	24,000	105
1926	25,000	35

The honey crop in Alabama this year was spotted. In the gallberry and ti ti regions a yield of four hundred pounds was reported from some colonies. In other localities the yield was fair, and in others there was very little surplus stored.

The local demand for honey was fair, with medium prices prevailing.

North Dakota's College Apiary

Experiment Station Apiary at the North Dakota Agricultural College. The shelter belt of trees in the background provides ideal windbreak protection.



Established by Samuel Wagner in 1861

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Salt For Bees

The magazine "France Apicole" reproduces, in its November number, an article by J. B. Weck, commenting upon the advice by P. R. Girtler, in the Austrian "Bienenfater," to use Glauber's salt in the feed given to bees, to combat the Nosema apis, which appears quite destructive in some parts of Europe. Although this trouble does not seem to be very damaging in this country, it is quite possible that a large portion of the troubles known as paralysis, spring dwindling, May disease, etc., may be due to the Nosema.

We must remember also that bees appear to have a liking for salt. In cases where they are seen about water-closets, it is the salt that attracts them.

In the above mentioned article, they recommend not only Glauber's salt, but also common salt. Glauber's salt is chemically known as "Sodium sulphate," while common salt is known as "Sodium chloride." Glauber's salt is used as cathartic, aperient in small doses. It is taken in doses as high as an ounce. Both this salt and common salt are recommended by this man as useful in the food given to bees. They advise the use of a tablespoonful of each salt in a gallon of sugar syrup and the feeding of a sixteenth of a gallon, or one-fourth of a quart, every other day. As we know, by experience, that bees like salt water, we think that this advice is good.

The article in question reports "a marvelous result after three weeks of this treatment, as colonies no longer died and the sickly bees in front of the hives entirely disappeared."

Salt is good for human beings and for horses and cattle; why not for bees? Try it. It has been recommended before. See paragraph 274 of the "Honeybee" of Langstroth-Dadant.

Sight Versus Odor

It has been held at different times by some beekeepers and even by some scientists that bees do not have a very acute sight, that they cannot distinguish objects readily, that most of their honey hunting is directed by the sense of smell only. A quotation from the "Scottish Beekeeper," in this number, will show plainly that bees distinguish between objects of similar kind and that their sense of odor is supplemented by their sight, which is undoubtedly acute. The main trouble with observers has been that they compare the senses of bees with their own, which are evidently different in range, in nature and in mode.

Unripe Honey

We are in receipt of a letter from Mr. B. A. Hadsell, of Buckeye, Arizona, an old and very experienced and extensive beekeeper, who complains that the sale of honey is hindered by beekeepers who, either through inexperience or greed, extract their honey when it is still unripe nectar, getting very large quantities of a product that sours in the containers, sometimes causing them to burst. He thinks that some of the honey of which foreigners complain as **undesirable American** honey is that kind of honey.

We had no idea that there were still some beekeepers who did as A. I. Root and Charles Dadant told of doing in the first days of the honey extractor—extract the honey as fast as the bees put it up and wonder at the immensity of the yield. They learned better immediately, for they soon found that the product would not do. It will not keep. If there are men who lack judgment enough to recognize this and try it more than once, they surely ought to be made to stop the practice. But we doubt very much if anyone will continue such a practice. The quality and "ripeness" of honey are of immense importance. If we wish our crops to sell, the quality must be undoubted. Thin honey ferments and becomes unfit for any kind of use, except to make vinegar.

We find that the sentiment in favor of educating the American public to the use of granulated honey is growing. This would very certainly help to eliminate the chance of unripe honey on the markets, for unripe honey will not granulate. Let us plead with all our customers for the recognition of the value of granulation in honey.

Granulated Honey In Bags

We acknowledge receipt, with thanks, of a package of four pounds of honey, granulated, done up in glazed paper bags of a pound each, that reached us from New Zealand, in twenty-seven days, after having traveled through the tropics and under the equator. The honey is fine, of soft granulation and good flavor. But the most important point for us to notice is the low cost of the package. In order to reach the most humble purse, we must be able to put up honey so that its price will be low, yet yield a sufficient profit to the producer.

Mr. Bamis, the sender of this honey, wrote an article on granulated honey which appears in this number.

Something of that kind must be devised in this country, so that the producer and consumer may be placed a little closer together. To produce honey that does not net us over 12 cents per pound, and have the consumer pay around 40 cents per pound for it, is unthinkable, though it is true.

Swiss Beekeepers

The editor wishes to make acknowledgment of the gift to him, by the Society of Apiculture of Swiss Romande, of a magnificent quarto volume of the "Thousand and One Views of Switzerland." This unexpected and apparently undeserved gift is increased in value by the dedicatory signatures of the seven members of the committee in charge, three of whom are known to our readers: Mr. Schumacher, editor of the Bulletin D'Apiculture; Mr. Mayor, president of the society, who represented Switzerland at the International Convention of Quebec, and Dr. Rotschy, well known scientist and student of beekeeping questions.

It is evident that the publication of the translation of the book of Langstroth, revised, into French, at Geneva, by the known leader, Mr. Bertrand, has continued the influence of the Dadant name to the present day. Our hearty thanks are tendered to the Romande Association for this beautiful New Year present. The work will be kept in the American Bee Journal library.

Is It Worth While to Take the Bees Out of the Cellar for a Flight During Warm Days?

In our Middle States there are many days in the winter when the beekeeper is sorry that his bees are in the cellar, for they must stay confined, while the colonies that are out of doors are enjoying several good flights. So one is apt to wish to give them the opportunity of a flight.

Acting upon this thought, one winter, while our bees were in the cellar, we took a certain number of colonies out to give them opportunity for a flight. We regretted it very much afterwards, for it was quite a lot of work and the colonies suffered afterwards, more than those that were allowed to remain without a flight. When bees are put into the cellar they are usually in a state of quietude, and remain so if the temperature is right. But when we put them out for a flight, in the middle of winter, on a warm day, they apparently concluded that winter was over. They began to breed, became restless, wanted to go after water or pollen perhaps, and suffered a great deal more than the colonies that were left in the quietude and darkness of the cellar till winter was over. If bees breed in the cellar, they are sure to become restless.

On the other hand, colonies may remain in the cellar during all of six months, and even longer, quiet and peaceable, provided the temperature is right. Mr. J. Verret, of Charlesbourg, near the city of Quebec, exhibited his memorandum to me at one time while I was visiting there, and showed me that he often kept his bees from 180 to 186 days in the cellar, over six months, and found them in good shape at the end of that time. Good, ripe, well sealed honey near the cluster, darkness, quiet, and the proper temperature of 42 to 48 degrees, and the bees winter well.

Snow In the Apiary

It required several years of snowy winters to convince me that snow was not likely to smother the bees unless it was packed very tightly about them, or melted and frozen again in ice sheets over the entrance.

One of the best beekeepers of Canada, Mr. Tissot, of Ottawa, encloses his apiary within a tight board fence at the opening of winter. The snow then falls and covers the hives to the depth of three or four feet, within the enclosure. But the warmth of the bees melts it on the underside so as to create regular avenues between the hives, and the bees do not suffer either from the cold or from want of air.

In our more southerly regions, where the weather does not remain cold continuously, but changes from cold to warm and to cold again, the greatest danger in times of snow comes from the snow melting about the hives and stopping the entrances with ice. It is not only a possible danger of smothering—there is also the alternative of having good flying days when the snow may be melted just enough to make a lot of water on the alighting board and causing the venturesome bees to drown in it or to be at least chilled by it.

We have therefore preached the need of cleaning the snow away in front of the hives whenever there is the possibility of a warm day and a thaw. Otherwise, the snow over the top of the hives is beneficial to the bees, for it protects them about as well as a double wall. Sleet is much more injurious than snow.

The Dixie Beekeeper

One of the most interesting bee magazines with which we exchange is the "Dixie Beekeeper," published at Waycross, Georgia, by Mr. Wilder. On the cover page of its November number it gives the photo of an apiary, on Key Biscayne, Florida, which was entirely wiped out by the hurricane that did so much damage to Miami. The leading article of this number describes the establishment of hundreds of apiaries on the great Okefenokee swamp in southern Georgia, showing the numerous drawbacks that meet the rough-and-ready beekeeper who braves all the difficulties of the flat lands of the south end of the state of Georgia.

In the same magazine will be found the last installment of an article extolling the beauty of the Suwanee River, which had so disappointed the editor of the American Bee Journal, when he traveled near its source and found only a muddy slough.

Spring Diseases of the Adult Bee

Switzerland has a Federal Commission for the study of the Nosema. A report published in the December number of the "Bulletin of the Societe Romande" indicates that the Nosema is only one of the diseases which annoy the bees in spring. They speak of the May disease and of a disease described in that country as "maladie des forets" (forest disease), which has symptoms similar to those of the Nosema. It is reported that the Nosema is not always fatal, that it appears mostly in the high valleys, and that some colonies not only live through the summer with this disease, but even cast swarms.

These matters are of interest to us, inasmuch as the Nosema disease does not appear at all fatal in the U. S. We believe that the causes of spring diseases of the adult bees are not yet all discovered. Much evidently remains to be learned and our scientists have plenty of work ahead.

The matter of the Nosema disease is quite important in Switzerland, for they state that, in some districts, the inspectors reported one-third of the colonies suffering from it.

The report above mentioned is signed by the well-known Dr. Rotschy.

In a private letter to us, Mr. Pierre Odier, of the vicinity of Geneva, mentions to us, on the other hand, the case of two apiaries in which the colonies that suffered the most from the Nosema were the ones that yielded the best crops, for three years in succession. Such reports leave the matter of diseases in a very vague condition.

Do Toads Eat Bees?

Replying to the statement of S. J. Harmeling on page 610 of the December number, Mr. J. B. Huffman, of Virginia, writes us that toads do eat bees, that he has seen them climb on the alighting board and gulp bees till well filled.

This is true, and they are very swift about it, for their tongue flashes out and a bee disappears each time. But toads also eat other insects and beemoths. On the whole, as they so rarely are seen on the alighting board and generally keep in the grass, where moths and other injurious insects hide, it is probably best to protect them. As far back as the fifth volume of the American Bee Journal, in 1870, page 161, the matter was discussed and verdict rendered for the toad, even if he is occasionally guilty of eating a few bees.

New Zealand Beekeeping

The Agricultural Gazette of New South Wales quotes H. Graham Smith, Apiarist of Hawksbury Agricultural College, to the effect that in 1906 there were more than 15,000 beekeepers in New Zealand, who produced but little more than a million pounds of honey. In 1923 the number of beekeepers had been reduced to about 7,000, while the production had been increased to three million pounds. Evidently beekeeping in New Zealand, as in America, is passing into the hands of specialists. When one-half the number of beekeepers produce three times as much honey it speaks well for the future of the industry.

A New Book On Queen Rearing

"Culture of Queen Bees" is the title of a new book in the Russian language, by V. S. Rajkovski, which has recently been published at Leningrad. This, however, is only a new edition of a book which has been familiar to Russian beekeepers for some time.

The Jungfrau and Kleine Scheidigg in the foreground. We had dinner on the porch of the large hotel

Visiting Beekeepers Abroad

I. SWITZERLAND

By E. F. Phillips

BEFORE we started on our trip among beekeepers across the water, the editor asked that I write an account of the journey from time to time. I do this all the more willingly because I believe that there are lessons in beekeeping to be learned from the other side, and especially because the trip was one continuous manifestation of international good will in our craft.

We sailed from New York on the Berengaria June 2, landing at Cherbourg, France, on June 8, after an uneventful passage. After getting through French customs, where we had no trouble, we went at once to Paris and arrived there about midnight. The trip through Normandy was most interesting, but the scenery and people there have been described by those who know them better than do we. The taxi ride through the streets of Paris to the hotel was thrilling, our first view of that wonderful city, and it was difficult for us to reconcile ourselves to leaving it without a long visit, but there were engagements ahead to be kept. We returned there later.

As we approached Bern, the capital of Switzerland, in the evening, but in full sunlight, the great snow-covered range of mountains to the south was plainly visible, our first view of the Alps. Arriving in Bern, we went directly to our hotel, where reservations had been made for us by the esteemed president of the German-Swiss Beekeepers' Association, Dr. Fr. Leuenberger.

The next morning we saw the sights of the city and about noon we called on Dr. Leuenberger at his home in the old part of Bern. He has recently been honored, and quite worthily so, by being granted an honorary doctor's degree by the University of Zurich, in recognition of the merit of his work in the control of bee diseases. Dr. Leuenberger is a simple, kind, fatherly old gentleman with whom everyone must fall in love at once. He greeted us with open arms and we had refreshments and a delightful hour with him in his home and in his garden among his bees. His English is about as good as our German, but by supplying each other with the missing words we got on famously. After a visit with him, he took us by automobile to the bacteriological laboratory at Liebefeld, just outside Bern, where Dr. Otto Morgenthaler has done his excellent work on bee diseases. Dr. Morgenthaler is a younger man than our guide, but just as fine, a delightful man with whom to travel, as we later learned. He took us through his laboratory, explained everything thoroughly to us, showed us specimens of **Acarapis woodi** which he had obtained from Canadian bees (more about that some day), introduced us to others in the laboratory, including Dr. E. Elser, who is working on the chemistry of honey, and, in short, left nothing undisclosed which might be of any value to one in the same lines of work as himself.

We visited the small apiary of the laboratory and saw the bees in the German type of hives, opening at the back. A few cursory examinations of apiaries run under that plan were insufficient to convince an American that such a system is best. Dr. Morgenthaler was not a beekeeper when he began his work, nor did he take much interest in beekeeping problems other than diseases for some time, but he has been fully and firmly convinced that to do good work on diseases or any other problem touching beekeeping, one must be a beekeeper, and he now is. Furthermore, I think that he will not object to my saying that he is most highly esteemed by the Swiss beekeepers. He is a German-Swiss himself, but later when we reached the French-Swiss beekeepers they all referred to him constantly as "Notre (our) Morgenthaler." I suspect that there are few

men engaged in the advancement of beekeeping anywhere who have a better grasp of the situation than has he, and it was a delight to meet him.

Dr. Morgenthaler then took us to his home for supper. He speaks a little English and we speak little German, but by piecing out occasionally with French words and a few Latin ones, we got on nicely. He plans to visit America to see our beekeeping and our bee disease work, and he cannot come too soon to suit us. His wife speaks English well and we had a delightful time in their home, our first meal in the home of a beekeeper on the other side of the ocean. A Swiss home is in some ways unlike an American home, for we found strange furniture, different foods and other dissimilarities, but we found the Morgenthalers "just folks" and had a delightful evening.

The following morning bright and early, Doctors Leuenberger and Morgenthaler met us at our hotel and took us as guests of the German-Swiss Society to the Jungfrau and then to Grindelwald. Wasn't that a fine thing to do! The trip through Thun took us along beautiful Lake Thun and then on to Interlaken, between that lake and the Lake of Brienz. As we went along, our genial companions were able to name every peak for us and to tell most interesting stories about them. At Interlaken we changed trains and started upward into the mountains. Past the wonderful Lauterbrunnen waterfall, we climbed steadily higher and higher until finally we disembarked at Kleine Scheidegg, at the base of the Jungfrau. There we learned that for the thirty days just previous the peak had been hidden by clouds, but on our arrival there was not a cloud in the sky, although in the evening the peak was again hidden. We changed trains again at Kleine Scheidegg and took the cog road up the Jungfrau as far as the Eiger Glacier, where for the first time we set foot on a glacier. I have studied for years the effects of glaciation on the beekeeping regions in this country and knew rather well what a glacier can do when it starts work for the advancement of beekeeping, yet never before had I stood on one. From the Eiger Glacier we returned to Kleine Scheidegg, where we had lunch on a porch looking out on the Jungfrau. Then we walked across the valley to a lookout point, where Dr. Morgenthaler took our photographs sitting in beds of crocuses, while within an inch of some of these flowers there remained the winter's snow. It would take a better botanist than I to tell of the wonders of the Alpine flowers, and on reading of them previously I had always thought that the picture was overdrawn. It was not, for that is impossible.

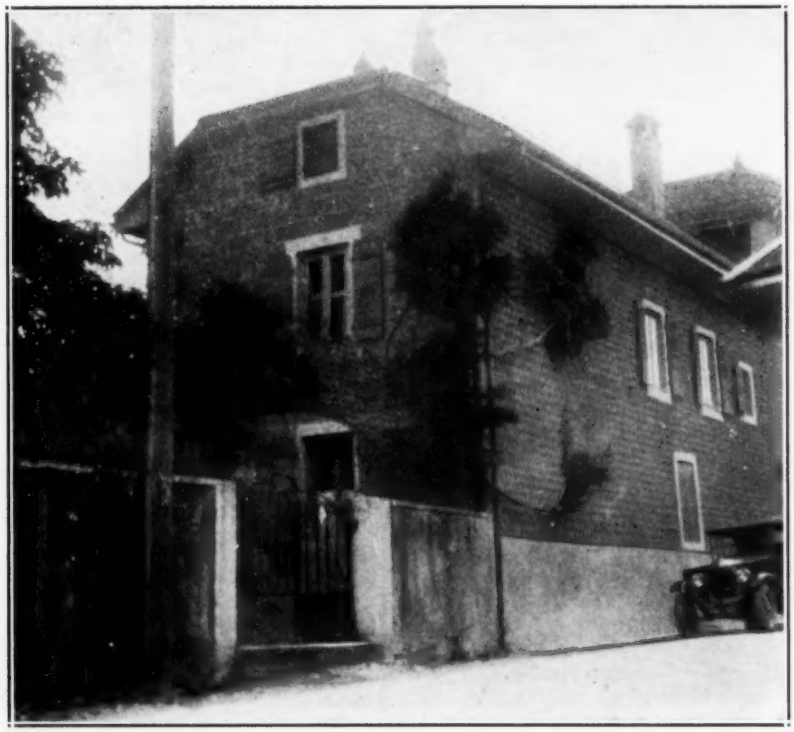
The next day, with Drs. Morgenthaler and Leuenberger, I went to Emmenthal to visit one of the largest apiaries in German Switzerland, owned by Mr. Lehman, who had gone out from Bern to meet us there. The readers of this Journal know how beekeepers talk when they get together, and when there were so many new things to see, they are quite able to imagine how many questions I asked, all of which were thoroughly answered. Mrs. Phillips had remained in Bern and had a fine time that morning with Dr. Robert Burri and his son, Dr. Burri being the man who did the first work on the bacteriological aspect of bee diseases in Switzerland, and whose work is classic. He is now director of the Liebefeld laboratory. He, too, is fine, as a number of Americans know who met him when he was over, and his son is a charming and enthusiastic young paleontologist, teaching in one of the German universities. They had lunch in Bern and we in Emmenthal, and the parties were united after lunch.

That afternoon, after saying our farewells to some of our friends in Bern, we started with Dr. Morgenthaler for Sion, where we went to meet the French-Swiss Society. We came down into the Rhone Valley to Brig, where we changed trains, our train continuing into Italy through the Simplon Tunnel. There was a wait of about an hour at Brig, and since Dr. Morgenthaler had been stationed there during one period of his army service, he knew where to take us to fill the time profitably.

Then we took the train for Sion, or Sitten, as it is called among the German-Swiss. Here we were met at the train by the officers of the Societe Romande, the French-Swiss Society of Beekeepers. The first one whom I recognized was M. Mayor, the president of the society, whom some of us had the pleasure of meeting at the Quebec meeting two years ago. He looks as well as ever and is just as jolly. With him were Forestier (lately deceased), who had charge of the apiary inspection; Schumacher, editor of the Bulletin, and a number of others. It was a great welcome. Not knowing just what was in store for us, we thought that we would be taken directly to the hotel where reservations had been made for us, but instead we were driven up to the place where the society had remained in session until our arrival. They had that day held their annual business session. Here they all were. There is no use trying to tell American readers what a welcome by the French-Swiss is like, for they are more effervescent than we are. Our healths were drunk and then they sang the Swiss national air for us, the tune being the same as that of "America" and of "God Save the King," which we later heard in Great Britain. There were also hearty cheers for "Notre Morgenthaler," into which they all entered.

Having been struggling with my weak German for three days, I found myself in much confusion on arriving among the French-speaking Swiss. While I read French easily, my speech is nothing to boast of at its best, but after three days of German it was considerably below par, and for the first few hours I found myself using French, English, German, and even a little Spanish and

Beekeepers at Evolene
Left to right: Mayor, Mrs. Phillips, Dr. Rotschy, and Forestier (now deceased)



The former home of Francois Huber in Pregny, near Geneva, Switzerland

Italian, rather promiscuously. However, we all spoke the language of the bees, and our French friends had been warned of our linguistic disabilities and made the best of an unfortunate situation. This is an opportune time to preach a sermon on the deficiencies of American education, because of which we are so greatly handicapped when we go abroad. To meet Swiss who speak at least three languages fluently does not make one boastful of American education, and I came back more firm than ever in my belief that students of beekeeping must read and speak languages other than English. To read only English cuts one off from most of the best scientific work on bees and from much that is of great practical importance, for we have no monopoly on advancement in apiculture.

The first reception over, we were taken to our hotel, where we hastily removed part of the marks of our journey, and went at once to one of the cafes of the city for the banquet which was given in our honor. We were served with a magnificent banquet inside, which again cannot be adequately described, for Americans cannot cook as well as the French and French-Swiss and there is no use trying to make ourselves believe that we do.

While we were still at table we heard music outside, for the rain had by this time ceased. We were escorted outside to places reserved for us, and on our arrival in the beautifully lighted grounds a fifty-piece symphony orchestra struck up the "Star Spangled Banner." Every reader of this narrative ought to get a thrill from that statement, but it can be nothing as compared with our feelings in that far-away land. Of course, we stood, and one of the beekeepers who was directing the program of the evening motioned for all to stand, which they promptly did. The music was beautifully played and the courtesy of our hosts in standing for our national anthem was most delightful.

This was followed by the appearance of twenty young girls, who, adorned with wings, compound eyes and antennae, came out to sing "La Romande Apicole" (French-Swiss Apiculture), the words and music of which had been written for the occasion. The music was in three parts, the voices were well trained, and we felt that we had never heard more beautiful singing anywhere. Immediately following that the smallest of the girls came to Mrs. Phillips and presented her with a beautiful bouquet of flowers, while I received a water color painting of the old Chateau de Valere at Sion, behind which was a poem in English welcoming us to the city. The work on this beautiful souvenir had been done by two White sisters at the Sion convent, on whom we had the pleasure of calling the following morning. This was followed by more excellent music by the orchestra until about 11 o'clock. We were then taken back to the balcony of the cafe, and after the music of the orchestra had ceased we sat about the tables and enjoyed the view and the company.

Then came one of the best things of the evening, when one of the beekeepers bgan to sing. He was immediately joined by others, and we were amazed at their well trained and controlled voices. Out under the open sky and in such an environment, it was delightful. When one song was over, someone would begin another, and so it went on for some time. About midnight we felt that it had been rather a long and strenuous day for the tourists, so we asked to be excused, but we have been sorry ever since that we did, for we learned the following morning that the singing was continued until about half past three. I have never met real beekeepers who know when it is time to go to bed, but usually they talk bees until the small hours. Our Swiss friends have found a better way to spend the evening than have those of us who only talk bees.

Sunday morning, June 13, we were up early and a group of us went to visit an apiary in which acarine disease was suspected, but we found none. I did locate a bee louse, which I promptly captured. Then we called at the convent to thank the sisters for their beautiful work on our souvenir, and returned to the hotel at nine o'clock to join the excursion planned for the day. The entire group climbed into motor cars, and here we were joined by Dr. E. Rotchy, who reads the journals in English and culls the best of them for the Bulletin issued by the society. Dr. Rotchy is great fun, a devotee of Mark Twain, which was a bond of union between us, and full of good American jokes which he fully appreciates. He rode with us on the excursion, with Dr. Morgenthaler on the other side, so we had a happy time.

Our excursion took us right up into the Alps to the south of the Rhone Valley, to the village of Evolene. We passed typical Swiss mountain villages, many interesting geological formations, waterfalls, and thousands of other things new to the American contingent, finally reaching our destination. Evolene must be seen to be appreciated, but we were much interested in the strange houses, the dress of the women of that region, and in fact with everything that we saw. Being Sunday, the people from the surrounding mountains had come in to church, after which they did their shopping for the week, so that they departed for home, laden with huge loaves of bread and other sup-

plies. Being Sunday, they were also dressed in their best and the place had a holiday air. Within the town we visited several small apiaries, all nicely kept in modern hives.

At noon we were served a banquet consisting of the typical foods of the country, as distinguished from the rather French type of food which we had the evening before. Following the banquet we had speeches under the trees outside, but a slight rain inopportunely put a stop to those and saved me a struggle. Back again to Sion in the rain, but this did not by any means spoil the trip, and it was a cheerful crowd which finally reached the lower level.

In the late afternoon we left with a group of the beekeepers for the city of Geneva, where again all arrangements had been made for our comfort. This trip took us down the Rhone Valley to Lake Geneva (Lake Leman), past the chateau of Chillon, constantly in sight of great mountains of which we had read since childhood.

The following morning we went about the city as ordinary American tourists, visited the offices of the League of Nations (until we were put out), saw the cathedral, opera house and other things with which Geneva is filled, but which any tourist can see. In the afternoon a party of beekeepers headed by Dr. Rotchy came for us and took us to Pregny on a pilgrimage to the former home of the celebrated Swiss naturalist and bee investigator, Francois Huber. There was thrill in that, you may be sure. The house is well preserved and stands on the estate of Baron Rothschild, north of Geneva. We took photographs of the house and of each other and enjoyed the opportunity greatly. Huber's home is unmarked, but this deficiency may soon be corrected. Returning toward Geneva, we passed the former home of the poet Shelley, went through the suburbs and out to the east of the city past Byron's former home to an apiary, and a good one, too. On returning again to the city we all went to a cafe, where our final banquet for Switzerland was served, a happy closing for a delightful but too short stay in that country. Early the next morning we started for France.

When I began writing, I rather expected to get more than five days into this much space, for our trip has not yet all been described. But there is nothing said about the five great days in Switzerland which I can think of omitting, and there are in fact many other things which I should like to share with our friends on this side. The conclusion which we reached after this short stay is that the beekeepers of Switzerland are about the finest people whom we ever met, but then we thought the same thing of the people everywhere we went this summer, and there is much to tell about the rest of the trip. Nowhere were we more cordially received than in Switzerland, and nowhere did we leave better friends behind us.

France, then England, and finally Scotland, and we are still a long way from home. But what a five days!

Getting Those High Swarms

By L. H. Cobb

Near our hives were two large locust trees, and the bees seemed to like the outer edge of those trees for a clustering place. They would hang there some twelve or fifteen feet in air, and not easy to get down. We managed two ways, but the first tried was not always so successful as we wished, so we switched to the other. We first located a hive directly under the swarm, making sure of this by hanging a weight to a line on a long fishpole which was held just under the swarm. The weight indicated exactly where they would drop—if they dropped. Usually they did, but now and then most of them took the air on the way down. The other way was to tie two sticks of suitable length in the top of a sack—sugar sack or grain sack, whichever was handiest—so it could be held open easily and slipped under the swarm with one hand. It is easy to dislodge the swarm by a jar or swing of the sack, and the bees drop to the bottom, where they are kept by shaking while the top of the sack is given a few turns about the sticks. The sack can be handed down to a helper or tied to a string and let down while the operator climbs down and prepares to hive by placing the sack in front of the hive opened as near the entrance as possible. We never had any trouble getting the bees to go inside. They seemed only too glad for the chance. We never tried to fit something like this to the top of poles, but would have done so if this way had not been easily worked on our trees. Even where bees are not very high, it is often more convenient to hive with this contrivance than to cut or saw off a limb and carry to the hive, and sometimes we do not want to remove a limb on which they cluster. Sometimes they cluster where the sack cannot be raised up under them, but even then we usually found a way. One time I had a swarm cluster around a limb fully three inches in diameter. I held my sack with one hand while I brushed the bees down into it with the other, shaking them to the bottom of the sack two or three times during the process, and we hived the swarm all right, though my right hand felt like it had been used as a pin cushion.

Kansas.

(No doubt the bees would treat the operator as a pin-cushion when brushed down into a sack. A much better way is to use a comb—old combs preferred—and hold it next to the cluster. The bees at once leave their cluster on the limb to settle on the comb. This is most practical where the bees have settled upon the trunk of a tree, or on a post, for brushing them is a thankless job.—Editor.)

House Apiary at Emmenthal, Switzerland, of Messrs. Lehman and Zurcher

Why Not Sell Our Honey at Home

By A. D. Boal

WHAT is wrong with our honey market? Why, with a yearly consumption of eighty-five pounds of sugar for every man, woman and child in the United States, should honey have such a small place in our food markets and on the tables in our homes?

Probably the best answer to this is lack of publicity. I say publicity rather than advertising, because we usually think of advertising in terms of space in newspapers and magazines, while publicity may take any form of placing our product before the public. This may be newspaper or magazine advertising, news articles, demonstrations at fairs, lectures, roadside signs, window displays or house-to-house selling campaigns. But in any event, if we want to sell honey in large quantities, we must in some way, get public attention and keep it.

Other products less staple are sold by consistent newspaper and magazine campaigns, backed by prominent displays on the grocer's shelves and in his windows.

Of all forms of publicity, probably the most practical for the beekeeper, especially if he lives in one of our smaller communities, is advertising in the home paper, coupled with some real effort spent on and with the dealer. If one sells direct to the consumer, the advertising must be backed by some form of personal solicitation to secure maximum results, but, for the purpose of this article, our discussion will be confined to the plan of selling through the dealer. There are two factors to be considered in local newspaper advertising — stimulating the interest of buyers and spurring the dealer to greater effort in the sale of our product. The dealer can do much if his interest is sufficiently aroused, and, after all, his cooperation, in giving our honey prominent display in his window and on his shelves, is the most important help we can have.

Magazine advertising in our national periodicals, especially women's publications, would undoubtedly be of benefit, but would require an enormous sum to do a real job, and would have the objection that beekeepers unwilling to contribute their share would benefit at the expense of the rest.

We will therefore assume that we are planning to market our entire crop by placing stocks with one or two of our best local dealers and then helping to move it by some well-planned advertising.

Probably a number of beekeepers advertise, some with a definite plan and others more or less at random. All advertising is of some benefit, but the kind that pays is the consistent, well-planned program that is backed by a live dealer and an aggressive beekeeper. There is nothing difficult or mysterious about such a program. First, we have a definite crop to dispose of and it has a definite retail value. Every good advertiser bases his expenditure on the amount of business he expects to do. Therefore our advertising appropriation becomes merely a matter of figures. The percentage to establish as a reasonable amount to spend is rather flexible, as it depends on a number of factors, such as local newspaper rates, size of the crop and the extent to which honey has already been pushed. However, it will be safe to put the cost at between 5 and 10 per cent. More will be required the first year, as there will be a nice repeat business in subsequent years as a result of the first year's work.

Probably it would be wise to figure on the maximum of 10 per cent to begin with. We then take our total crop value at retail and deduct the grocer's profit, which should be about 20 per cent of the selling price. Ten per cent of the remaining sum will be our advertising appropriation. This still leaves us with a nice balance for our honey as compared with the bulk price we would obtain if we shipped it to the commission man in sixty-pound tins.

Having decided how much we are to spend for advertising, we go to our local paper and contract for a series of ads. The size and number of times these appear depends on the amount of money available. The larger the ads the better, but large space must not be used at the expense of consistent appearance. Small space used consistently is far better than large space appearing at rare intervals. A four- or six-inch ad one column wide can usually be purchased for $1.50 to $2.50, and, while more space is desirable, an ad of this size is large enough to tell the story and get attention. Even smaller space can be used to good advantage if necessary, and reading notices or classified ads can be used with value either alone or to supplement the larger space.

Our campaign should be planned to run consistently through the winter months, when honey is most in demand, and occasionally throughout the other seasons. A few dollars should be reserved from the appropriation for a display case or two to loan the dealer, some attractive signs, circulars, or any other selling helps that the beekeeper may care to furnish.

After the campaign has been planned, it would be well to prepare some of the ads and ask the printer to set them up and furnish proofs. Most papers will be glad to do this if assured of the advertising. With these proofs, or a plan of the campaign, if proofs are not to be had, we are prepared to start merchandising the campaign to the dealer. We want him just as enthusiastic as possible, so we show him the ads and tell him what we are going to do to help him sell more honey.

We explain all the advantages of honey over other sweets, tell him of its fine food qualities, and ask for his full co-operation, in return for which we agree to put the name of his store in our ads. We ask that he carry a good stock of the different packages we have to sell, and agree to keep it in good condition for him. We ask for a prominent display on his shelves and, when possible, in his window. If we have the small glass cases which can be purchased for about two dollars we loan him one for his counter. We agree not to sell honey at less than the retail price and to give him every help possible, but reserve the right to place our honey with other dealers if we find it expedient.

Possibly the dealer will be willing to share a part of the advertising, and we can then use larger space or a greater number of ads throughout the season.

Probably many beekeepers hesitate about advertising because of a belief that they lack the ability to prepare the ads, or that the preparation of the copy is a mysterious and complicated art. Space does not permit a discussion of this most interesting subject in this article, but the preparation of these ads need not be difficult. It is only necessary to tell in a few simple words the advantages of honey. Each ad may have some specific thought for the use of honey. One ad, for instance, may bring out the purity of honey and its wonderful food qualities; another may picture the deliciousness of honey on cakes and waffles; another, the advantage of having children eat honey instead

of other forms of sweets. There are any number of selling points that can be used, and these will suggest themselves to the beekeeper as he works out the ads.

The ads should be short and there should be plenty of white space around the type. The local editor will be glad to help in preparing a series of attractive ads and also to run interesting stories about the bees if supplied with the material. Bees will always be of great interest to the general public and short news items with the beekeeper's name mentioned help the general campaign for the sale of more honey.

With campaigns such as we have described running in the many towns where honey is produced, and in the hands of live dealers, there should be a much better demand for honey and a better price for the beekeeper.

Illinois.

Variation of Bees and Their Organs

By T. A. Tuenin, Tula's Apicultural Experiment Station

THE variety of the natural conditions in the extensive area of U. R. S. S., the presence of various bee races, great sowing of clovers,—all this affects the problems of the study of local bees, of their improvement in corresponding local conditions and of best utilization of the nectar plants.

Therefore, one of the problems of Tula's Experiment Station for Apiculture is the studying of bees at the Experiment Apiary and their variableness in regard to selection and cross breeding. Although this work is only beginning, we desire to inform the readers of the American Bee Journal of the first results of our investigations in this domain in order to give, by this, the characteristics of our local bees.

We determine the variableness of bees' dimensions by their weight. In order to avoid the errors consequent upon the various loads of the honey sack and rectum, we take the bees when they emerge from the cells. The weight of such bees is always more than the weight of flying ones. We weigh bees on balances of Sartorius. There are variations of single bees' weights from 0.1052 to 0.1383. The average bees' weights in colonies are as follows:

No. of the Colony	Average Bee Weight in Grams
89	0.11826
16	0.12049
31	0.12182
15	0.12734
13	0.12916
28	0.13060

It is evident, thereby, that even the average weight varies greatly between colonies. Our investigations showed that we cannot take bee weight for a characteristic sign of the race, because this sign varies very much from exterior factors.

This summer we determined, according to the age of combs, the weight of emerging bees which were the children of one queen. We took for experiment four sorts of combs, gave them to the one colony, No. 89. Here are the results of this experiment:

	Light Comb	Light Brownish Comb	Dark Comb	Almost Black Comb
Number of generations which came out of comb before experiment ----	2	6	28	38
Diameter of cells -------	5.262 mm	5.13		4.99
The average weight of emerging bees -------	0.12512 gram	0.12007	0.118501	0.10695

Result: The more numerous the generations that came out of the cells, the less the weight of emerging bees.

In addition to these results, we had, this summer, the following interesting test: At one inspection of the colony No. 28, in order to replace the old queen, which was born in 1922, the collaborator of the station, A. S. Mikhailoff, found, in one drone comb, sealed worker brood, which occupied about half of a Langstroth frame, on both sides. The drone brood was scattering, a few single cells among worker brood.

We kept this frame in the hive till the brood emerged and determined the average weight of 106 emerging bees. It was equal to 0.14506 gram. We determined also the average weight of 114 emerging bees, which were born in worker cells of this colony, No. 28, and found it 0.13060 gram. The diameter of the drone cells was 7.22 mm.

We see, therefore, that the weight of worker bees born in drone cells is much more than that of bees born in worker cells of the same colony at just the same time. Those and other bees are studied now in detail.

Such is the influence of cell dimension on the weight or dimensions of bees.

Tula's Apicultural Experimental College.

(The most interesting feature in the above experiments is in the producing of workers in drone cells. We have never seen it except when the queen was young and the colony deprived of a sufficient amount of worker cells. In that case the bees reduced the opening of the cells to the width of worker cells and the queen laid worker eggs in them. We would like to know whether this was the case in the present instance. We thought at first that, perhaps, the drone cells mentioned were undersized, but if they were 7.22 millimeters in diameter, they were larger than the average of our drone cells. It is commonly figured that four drone cells measure an inch. This would make 25.4 millimeters, and our correspondent's figures give 28.88 millimeters as the diameter of four drone cells. It is to be regretted that we have not yet adopted the metric system, which is so very easy, since it is all in decimals, while our inches are still figured in quarters, eighths, etc. Our scientists know how to appreciate it, for they have all adopted it.—Editor.)

Financing Idaho Honey Producers

Financing or orderly marketing for Idaho honey producers was discussed here recently with directors of the state association, by W. E. Meyer, assistant manager of the Spokane Intermediate Credit Bank, at a special meeting called by R. D. Bradshaw, Wendell, president of the association.

Directors also discussed proposed articles of incorporation of the marketing association and warehouse problems. Storage of the honey crop in bonded warehouses and financing through the intermediate credit bank by the use of warehouse receipts was also proposed. Honey producers throughout the state have approved the tentative plans at regional meetings.

Death of Mrs. Hiatt

Mrs. Clara Hiatt, wife of R. D. Hiatt, deputy State Apiarist of Ohio, died at her home in Columbus on November 6. Because of his work as an inspector for nine years, Mr. Hiatt is well known to Ohio beekeepers. Mrs. Hiatt has been active with her husband in exhibiting at the Ohio State Fair for several years past and thus had special opportunity to become acquainted with many of our readers, who will regret her passing.

Blossoms and leaves of eucalyptus

The blackwood tree, Acacia melanoxylon

Southwestern Honey Plants

Some Introduced Trees

By Frank C. Pellett

AMONG the many foreign trees which have been generally planted in California, the Acacias are well represented. Bailey lists sixty-seven species in his Cyclopedia of Horticulture, which are grown as ornamentals. A few of them, like the Huisache and the Catsclaw, are native to this country, but most of them have been brought from Australia. The genus is a large one, more than six hundred species being known altogether, common to tropical regions of the world.

Most of the acacias are rapid-growing trees with rather short lives. The trees will not stand very much frost, hence in this country they are confined to California and the southern states. They are drouth resistant and, once established, will thrive with limited water supply, although, of course, they grow much more rapidly under irrigation. Some of the native species are found in very dry situations.

One is impressed with the fact that the bee flora of Australia as described by Tarlton Rayment consists very largely of two groups of trees, the acacias and the eucalypts. Although he lists several hundred different species of acacia common to Australasia, he states that "few if any of the indigenous species yield nectar, although their value as pollen producers can hardly be overestimated."

This is in marked contrast to our American species, which yield honey generously in the case of the catsclaw (Acacia gregii) and the Huajillo (Acacia berlandiera), which are among the most important sources of honey in southern Texas and other desert areas.

Sydney wattle, Acacia longifolia

The huisache (Acacia farnesiana), common to southern Texas, yields pollen in great abundance, but probably is of little if any value for nectar.

Apparently the Australian species which are cultivated in California are no different here than in their native country, where they are known by the common name of "wattle." The bloom is very abundant and is visited by immense numbers of bees. Casual observers readily assume that they are gathering honey, when, in fact, it is only pollen which attracts them.

From among the numerous species found in California we are showing photographs of the blooms of three, herewith. The tree, which in Australia is known as Prickly Moses or Prickly Mimosa (Acacia verticillata), blooms very early in spring. The picture was taken from a tree on the grounds of the Agricultural College in early March at the time of the writer's visit. This is a very attractive ornamental tree and well worthy of cultivation by any flower lover who has space available.

The Blackwood

The blackwood tree of southeastern Australia (Acacia melanoxylon) is reported as attaining a height of eighty feet in its native land, where it is found with a stem several feet in diameter. The wood is used for many commercial purposes in Australia, including furniture, finishing for houses and railway coaches and other purposes requiring good appearance. It is used in boat building also, and is said to be very good for bending under steam, as it does not warp.

It is quite generally grown in California as an ornamental. The abundant clusters of bright flowers are very attractive to the bees, which seek it eagerly for the quantities of pollen available.

The Wattle

The third species, sometimes called "wattle" (Acacia longifolia), is a bushy tree also with abundant flowers sought by the bees in similar manner. Von Mueller, in "Extra-Tropical Plants," recommends it for holding loose coast sands. He advises the general planting of this species in places where the lower branches will take root in the sand. Like the other species, it is found about dwellings and along streets in many California towns.

While California bees get pollen in abundance from the dozens of acacias which have been introduced from Australia, it is doubtful if any of them are of importance as a source of nectar. In some localities pollen is next in importance only to the principal source of honey, but in California there are so many different plants blooming throughout the year, in the towns and cities, that pollen plants are not particularly needed in most places.

The Eucalyptus

The eucalyptus trees, commonly called gum trees, are natives of Australia, where more than two hundred species are known. Probably not all have been introduced into California, but there are so many species that only a specialist is able to identify them all.

In the "Honey Flora of Victoria," by F. R. Buehne, government apiculturist, more than one hundred pages are given to a description of the different species of eucalyptus and their importance to the beekeepers of that province. Likewise, Rayment gives about thirty-five pages of his "Honey Plants of Australasia" to this same group. Evidently without the gum trees, beekeeping could not amount to very much in that part of the world.

The blue gum (Eucalyptus globulus) is among the most widely cultivated varieties in California and Arizona. It is said to be one of the most rapid growing trees known and attains an immense size. Keels 120 feet in length have been secured by shipbuilders from this tree. The wood is of good quality and used for a great variety of purposes.

Oil of eucalyptus is distilled from the leaves and is an important product in the drug trade. Thousands of pounds are exported from California each year.

California beekeepers report nectar from this species as being of rather constant yield, but that the honey is of inferior quality and not much in demand. The scarlet bloom (E. ficifolia), on the other hand, is reported as yielding honey of light color and good flavor.

The blooming period of the different species extends over almost the entire year, so that the bees are finding something from eucalyptus at every season. It is probable, however, that but a small portion of the California honey which goes to market is from these trees, the greater part being consumed by the bees in brood rearing and in colony activities. The greater part of the domestic product from this source is of indifferent quality, even though some species yield honey of good taste.

In Australia, on the other hand, the eucalypts are the principal source

Acacia verticillata

of all honey which is exported. The following quotations from Rayment ("Honey Plants of Australasia") will give an idea of their value on the other side of the world:

"While all the Australian states are favored by the eucalypts, the honey from each species is quite distinctive in color and flavor. The color ranges from the dark vandyke brown of the common 'stringybark' to the pale tints, almost water white, of the honey from 'yellow' box and 'red' gum. Even the same species under different climatic conditions vary so much from the typical form as to justify the creation of a separately named variety."

"Under chemical analysis the honey from the different species shows wide divergence. This is also true of the flavor. It is remarkable that no two species yield honey of exactly the same flavor. Apiaries separated from each other only five or six miles show very different results."

"The flow from eucalypts is astonishing when the conditions are just right; it does not always cease at night. Mr. Pender, editor of the Australasian Beekeeper, New South Wales, reported his bees working on a flow during bright moonlight nights. Yields of 400 pounds of honey per hive during the working season are not unknown, and the author is personally in touch with an apiarist who harvested twenty tons of honey from 153 colonies, all gathered within a space of two to four months."

Bees and the Bank

By C. M. Littlejohn

Through window displays, certain Northwest banks are assisting in the development of the bee industry in that section of the country. Two Seattle financial institutions have lent their window display space to honey, and live bees crawling over the combs, before the gaze of countless window shoppers.

With many thousand pounds of honey put up from the hives in and near Yakima, Washington, honey is beginning to be recognized as an important industry in the state of Washington, and a product to be fostered, developed, advertised, distributed and marketed. Creating an interest, therefore, in a product which contributes to the industrial wealth of the state may be regarded as a proper function of a bank. It indicates moreover what can be accomplished by real cooperation between the banker and the producer.

For some time, window space has been entirely wasted by banks, until lately several Seattle institutions have found a most profitable use for this idle asset, and have capitalized it by advertising products upon which the financial prosperity of the city and surrounding agricultural section depend to a greater or lesser extent.

In this manner, honey has come in for its share of attention. As honey jars, glass containers or labeled cans would not make a very attractive display, bees, alive and tracking their way over the little cells in the comb, have been selected to perform, and, engaged in doing their daily stunt, they make a most interesting window display that is noted by all the passersby.

Cooperation between the bee men and the banks of other sections may likewise indicate the importance of the industry to those particular regions, as well as furnish a most interesting window display to interest the city man or woman, to whom the activities of bees represent as a general rule a closed book. Pausing to give attention to the bee display, the citizens will have the matter of honey impressed upon them in a most suggestive manner.

Washington.

The Temperature of the Honeybee

By Dr. K. Brunnich

IS the honeybee warm blooded or cold blooded? This has been much debated. We all know that bees produce heat and that they cannot live below a certain temperature, much above the low temperatures of our so-called temperate countries.

At the Minnesota Agricultural Experiment Station, Gregor B. Pirsch wrote a study, published in the Journal of Agricultural Research of Washington, D. C., and reprinted in a twelve-page bulletin. The following article from Dr. Brunnich, of Switzerland, refers to this question:

A few days ago I received, through the kindness of the U. S. Apiarist, Mr. Hambleton, the paper by Gregor B. Pirsch: Studies on the temperature of individual insects, with special reference to the honeybee, made in the Minnesota Agricultural Station. I suppose that the matter has been somewhat suggested to the author by my own studies on the same subject (1919); therefore I should like to give in a few words the conclusions of my studies.

Basing myself on my thermoelectric measurements of bee bodies as well as on my experiments with a minute mercury thermometer on drones, and further using the publications of Professor Cisielski, of Lemberg (who died in 1914), especially his book on the bees, published in 1888 in the Polish language and not yet translated into one of the current languages, I formed my conviction in these matters as follows:

1. Under normal conditions, the temperature of the bee is about 39 degrees C.; it is not influenced by the temperature of the surrounding air; little deviations upwards or downwards may be possible.

2. The temperature of drones is higher than that of workers and goes up to 48 C.

3. The temperature of the brood is higher than that of the hive and reaches 45.2 C.

My unexpected, nay, puzzling results met with great opposition from some apiarists, who, however, were not able to give serious reasons against them, nor were my experiments reviewed till now. It seems that they thought a simple physician unable to solve such problems; they did not know that I have made a serious study of physics at the Polytechnic of Zurich and that for the last twenty-five years I have occupied myself with anatomical and physiological investigations on the honeybee. It is my profound conviction that only he who possesses good notions on physics and who knows, as far as possible today, the anatomy and physiology of the bee has a right to express himself. Let me now give an extract of the paper of Pirsch.

In measuring the temperature of the bee's body, Pirsch proceeded exactly as I did, with the difference that he possessed better instruments. While the bees, after being pierced with my needle, died infallibly, Pirsch was able to construct so fine a needle that the bees survived and seemed not to be damaged by the little wound. This assertion is not to be doubted.

When he had taken the bees out of the hive, Pirsch placed them immediately into little cages, troughs of wood only one-quarter inch in height and breadth and five-eighths inch in length, in the clear. He shut the opening above with cotton threads, which he wound around the block to prevent the bees' escape. It was easy to pierce the bees through those threads, as they could move but little.

I suppose Pirsch was guided by the traditional idea that the temperature of bees changes with the temperature of the surrounding air. For this reason he put the little blocks with the bees into rooms of different temperatures, from 5.5 C. to 58 degrees. There he left them for ten minutes. For this purpose he used a cold-storage, his laboratory, and boxes which he heated with electric lamps. Here are his figures in centigrade degrees:

Air Temperature	Temperature of bee bodies Maximum	Minimum	Average body temperature	Difference bet. body and air temperature	Number of bees
5.5	14	8.5	10.2	4.7	100
21.4	31	22.0	25.8	4.4	100
27.0	30	28.5	29.1	2.1	54
30.5	34	31.5	32.0	1.5	100
35.0	37	34.5	35.1	0.1	100
39.5	42	38.0	39.5	0.0	100
43.5	44	42.5	43.6	0.1	100
52.0	48	45.5	46.0	— 6.0	100
58.0	48	45.5	46.4	—11.6	11

The first column gives the temperature of the room, in which the imprisoned bees have been exposed for ten minutes before being pierced. Column two is the highest, column three the lowest inner warmth of all the bees of a series; column four shows the average of those temperatures, and column five the difference between columns one and four.

There is no doubt that the measurings were absolutely exact, and the more surprising are the differences between two and three; I suppose that the time of ten minutes may not have been always kept exactly.

The author concludes that the inner warmth of the bees depends largely upon the temperature of the surrounding air, a result which agrees with the old theory. Its partisans will be, I think, pleased with this confirmation. But I shall try to prove that the figures have no value for the true inner temperature of bees.

Everyone who handles bees knows how quickly they are benumbed when the weather is cold and they are out of their home. This happens even at 14 degrees (57 F.) with bees on a window, when they are not able to find their way into the open field. Why is this? When they cannot defend themselves deliberately against the cold, their temperature begins to sink; the more their inner warmth is sinking, the less they can struggle against chilling. Cisielski says, with full reason, that when the inner temperature of bees sinks below 35 C. they are not able to execute their normal functions. For the same reason, bees do not fly out, as a rule, when the outer temperature is less than 10 C. (50 F.). The danger of the sinking of their temperature is too great; once their temperature sinks a few degrees, they are unable to further hold it up, till the outer temperature is reached.

The bee can struggle against its greatest enemy, the cold, only if it is in normal condition and completely free in its actions. If, for instance, a bee begins to feel cold, when on the alighting board, it will immediately go into the hive, where it will be sheltered, or may absorb some honey to kindle its inner combustion.

These notes are easily understood if we consider the light density of the bee's body and in consequence the small amount of stored calories; if we remember further that its body contains a great number of air sacs

and that the surface of those air sacs and of the millions of trachea and tracheoles is enormous in relation to its weight. During the respiration, which is quite energetic with bees, the cooler air is constantly streaming into the air sacs and trachea and will lower the temperatures of those surfaces. It is comprehensible that, under abnormal conditions, the bee is defenseless against a slow but sure inner cooling.

If, therefore, we wish to measure the inner temperature of a bee, we must take the insect as quickly as possible, from the alighting board, when it returns from a long flight or directly out of the hive. But Pirsch goes and does the opposite: he confines the bee during ten minutes in a cage where it cannot stir; where, at all events, as the author says himself, it cannot move its wings. These conditions are absolutely abnormal and the bee, condemned to passivity, is unable to fight successfully against the cold, when the outer temperature is lower than its own. The longer it is exposed in this strait-jacket, the more the inner temperature will sink, and it is nothing but a question of time till the body temperature has reached the external temperature. The premises of Pirsch are false, if but for the reason that the temperatures are purely dependent upon the time of imprisonment; ten minutes is quite an arbitrary time. Had he made some preliminary experiments, I suppose he would have changed his arrangement. He should have taken twenty bees in the same conditions, the first measured at once, the others confined and measured from minute to minute. Had he done so, he would have found that the initial temperature was about 39 C. and it would have sunken from minute to minute.

Now let us see what the figures of Pirsch can tell us, which indeed they can. When one bee, exposed during ten minutes to a temperature of 5.5, in a narrow cage, shows after this time still an inner warmth of 14, it is certain that its initial temperature must have been quite respectable. Of particular interest is the following fact: With outer temperatures from 35 to 39.5 he found the average of 100 bees, after ten minutes, almost exactly the same temperature. Does not this evidently prove that the inner temperature of the bee must lie between 35 and 39.5? The emprisoned bee was at those temperatures quite at its ease and did not have to struggle against cooling; its temperature remained normal notwithstanding the conditions of restraint.

Exceedingly interesting is the result that a bee, confined in unnatural conditions during ten minutes, exposed to a temperature of 58, is able to hold its inner warmth 11 to 12 degrees below the surrounding heat. The explanation is easy; by evaporation during the respiration the inner organs can be energetically cooled; we know that evaporation of water demands great quantities of warmth. To be sure, this will go only to a certain point—i. e., till the blood of the bee is so thickened that existence is no longer possible. That is the cause of the death of the great number confined at 58 degrees. Does this not also prove that the bee is an animal of warm blood? At all events it demonstrates the well developed ability of the bee **to regulate its own temperature, a fact which for a long time I have emphasized.**

I consider the figures of Pirsch a brilliant confirmation of my assumptions.

Switzerland.

As Others See Us

By Francis Jager

I HAVE been waiting for somebody to contradict the statements in the British Bee Journal of July 29, 1926.

Commenting on Dr. Phillips' visit, the Journal says: "Dr. Phillips proved himself to be an unusual American by his modesty and veracity." Very true, except for the word "unusual." How would English beekeepers like it had Dr. Phillips said: The editor of the British Bee Journal proved himself to be an unusual Englishman for his modesty and veracity?

"Both in conversation and in his speech he exploded many of the theories and statements with regard to American beekeeping as propounded by those who belittle and deride the methods followed in this country."

Dr. Phillips has exploded many American theories, and let's hope he will explode some more; progress is built upon exploded theories. We are after facts, not theories. As to belittling and deriding European methods of beekeeping, it is not in the American mind to do so. We are constantly learning from European publications; we concede their supremacy in scientific research, but we never belittle or deride. I dare say that European bee journals contain more ridicule of American beekeeping in one month than ours do about European beekeeping in a lifetime.

A little farther the same report quotes Dr. Phillips as saying: "Mrs. Phillips and I have just come from France, and we met some prominent bee experts over there. It was a wonderful opportunity of gaining and giving information and also of clearing up some misunderstandings. Several people said to me, 'But beekeeping in America is done on such a large scale.' (Laughter.) Well, the American character is this: If we are going to publish a picture of an apiary we always publish the biggest we can find. If we are confined to a picture of one beehive, we give one that is stacked up with supers six feet high." (Laughter.)

It is hard for an Englishman to catch the shades of meaning of the American language, particularly the concealed humor of which Dr. Phillips is a master. But suppose Dr. Phillips made the above statement with great earnestness and poise, why the laughter? When they wish to publish a picture of an apiary in England, do they search for the smallest and poorest, or if they wish to illustrate a beehive, do they search the country for the shabbiest and most dilapidated? Moreover, if we desire to publish big apiaries and beehives six feet high, we have thousands of them to choose from, and no one knows this better than Dr. Phillips, and he would be the last person in the country to deny it.

Now comes the climax: "Another thing that many beekeepers over here do not know is that beekeepers are scattered throughout the United States; well one-third of the states are uninhabited." (British Bee Journal.)

Refrain from laughter, please. Dr. Phillips is supposed to have given utterance to this sentence in his poor English. Give credit to the English Bee Journal for disclosing to the world Dr. Phillips' ignorance of American geography and American beekeeping conditions.

The intimation appears to be that there are no beekeepers in the uninhabited portion of United States and that the rest of the country which is inhabited could not contain the number of large apiaries and big hives about which we boast.

I give you here the one-third of the states which, according to the United States census of 1920, have the lowest relative population:

Florida	New Mexico
North Dakota	Arizona
South Dakota	Idaho
Oregon	Utah
Montana	Washington
Colorado	Kansas
Nevada	Nebraska
Wyoming	Texas

Well now, for the sake of argument, let us exclude these uninhab-

ited states where beekeeping is impossible on account of the lack of food, transportation, and danger from wild beasts and savages. We still have some territory left that is, at least, partially colonized, wherein several large apiaries could be kept without seriously interfering with traffic. The news that there are 16,000,000 inhabitants in our "unoccupied" territory does not seem to have reached the British Bee Journal as yet.

No one in the United States will ever believe Dr. Phillips capable of making such silly statements for "clearing up some misunderstanding." It is unfair to lay the baby at Dr. Phillips' door when its father has never seen the United States. English beekeepers had a fine opportunity to learn from Dr. Phillips' visit the truth about United States beekeeping, but it is unfortunate that they have failed to do so.

Minnesota.

Beekeeping Conditions and Methods of Management in Southwest Texas

By H. E. Coffey

SOUTHWEST Texas has long been looked upon by many as the beekeepers' Mecca—the most desirable part of the state for beekeeping. The physical characteristics of this section have been correctly and fittingly described by a local verse writer, Mr. Albert Friedrich, from whose poem, "Hell in Texas," I quote the following lines:

"He (the Devil) began by putting
thorns all over the trees,
And mixed up the sand with a million
fleas;
He scattered tarantulas along the
roads;
Put thorns on the cactus, and horns
on the toads.

"He lengthened the horns of the
Texas steers,
And put an addition to the rabbit's
ears:
He put a little devil in the broncho
steed,
And poisoned the feet of the centipede.

"The rattlesnake bites you, the scorpion stings,
The mosquito delights you with his
buzzing wings;
The sand-burs prevail, and so do the
ants,
And those who sit down need half-
soles on their pants.

* * *

"The heat in the summer is one hundred and ten,
Too hot for the Devil and too hot
for men;
The wild boar roams through the
black chaparral," etc.

Notwithstanding these natural drawbacks which the poet has enumerated, this portion of the state has many inducements to offer the beekeeper. The early spring honeyflow, which may come from a number of sources, is reasonably sure and only the very best grade of honey is produced at this season of the year. Among the most important sources from which early spring honey may be harvested are catsclaw, soapbush, mesquite and guajillo. These plants are all dwarfed trees or bushes, and all these and other varieties are to be found in most localities. The only important honey-producing weed in this part of the state is the horsemint. Its yield is fairly certain, provided we have a good fall season to insure its growth in early spring. Honey from horsemint is usually harvested in late May or early June. The fact that this plant yields slowly over a period of about a month makes it important to the queen breeder and shipper of package bees. Honey from horsemint ferments readily if not thoroughly ripe when taken off the hives. It is not as light in color as the early spring honeys, and its slightly strong flavor is objected to by many consumers. It rarely ever granulates and aids in preventing granulation when mixed with honey from other sources.

The feeding of artificial pollen is rarely necessary in most localities, in this part of the state, as there is an abundance of natural pollen from the middle of February on through the season. In fact, natural pollen is so abundant that the brood combs are often clogged with it and extracting combs many times break from the strain caused by stored pollen. Many times pollen is abundant when there is little or no nectar.

In this region, as in the North, spring is the critical period in the life history of each colony. Agarita, which usually blooms in February (rarely in December and January), often gives a great stimulus to brood rearing. A sudden cold snap may cause this plant to cease yielding, and a break in the honeyflow may last for two weeks or more. It requires a large amount of stores to carry bees with brood over such a period, and feeding has to be resorted to. If the season is favorable and no extended break in the honeyflow occurs, the beekeeper will have little to worry about.

With us, April is the swarming month. By the first or middle of the month (sometimes earlier), depending on the season, all colonies from which an early crop may be expected will have built up very strong in numbers. When the field force of each colony is confined at this time of year by unfavorable weather, such as cold or rain, queen cells are almost sure to be started and it is customary with many beekeepers to go through the brood nest every six days and destroy all queen cells. In addition to this, some beekeepers who have imperfect combs practice destroying drone brood, which to some extent reduces the swarming fever. To avoid the extensive labor which a periodical inspection of the brood nest calls for, Mr. Henry Brenner, a noted authority on beekeeping in Texas, and others practice dividing each colony early in the season. A queen cell is given in the original brood chamber. Over this is placed the queen, with unsealed brood and bees, separated from the lower brood nest by an inner cover or some other kind of division board. After the queen in the lower compartment is mated and laying, the two colonies are united by the newspaper plan. It is expected that the old queen will be killed by her younger rival, and, with a young queen, no further swarming trouble is experienced during the season. When dividing, it is of course necessary to provide the upper division with an entrance, either by notching the inner cover or by making an auger hole in the hive body.

Toward the close of the spring flow, in April, is a favorite time with many for dividing for increase. Colonies divided at this time and headed by a laying queen will soon build up to normal strength, and should a honeyflow come from mesquite, in June, they will each produce about as much surplus on the average as a colony which has not been divided. Others find it profitable to divide in September, provided there is a fall honeyflow, as colonies divided at this season will give very profitable returns the following spring.

While large yields of honey per colony have been reported from the Southwest, yet a large crop is the exception and not the rule. Probably in no part of the United States is the honeyflow more uncertain than in this region. The early spring flow, which is reasonably certain, usually

results in a surplus of from twenty-five to fifty pounds per colony, average. This crop is harvested in April or early May. One can rarely, if ever, count on any further surplus during the year in our particular locality. In 1924 mesquite yielded about ten pounds of surplus per colony, in June. The last surplus to speak of, to be obtained from its second blooming period in June, was in the year 1916, when full depth supers were filled in four days. Rarely, but occasionally, a crop of honey may be obtained in the fall, which usually comes from rock brush or from yellow top. Last season a good surplus might have been obtained but for the swarms of butterflies and other insects which covered the blossoms of all fall flowering plants like a plague. Fireflies are sometimes an equally troublesome pest during the horsemint flow in May.

Beekeepers here often make the mistake of robbing too closely in the spring, and, where no further nectar is obtained during the season, the feeding of large quantities of sugar syrup is necessary in order to bring the bees through the winter. Many beekeepers practice feeding in the open, while others pour the syrup into the combs by means of a can or cup with holes in the bottom. Some of the more progressive apiarists, however, now practice feeding by means of the friction top pail, while, better still, some reserve a sufficient number of full combs of honey to supply all stores required.

Most beekeepers practice scattering their colonies in an irregular manner under mesquite and other trees, as they find this more practical than lining them up in long rows. Where colonies are placed too close to each other, robbing is difficult to control and the bees are more cross and harder to handle. While it is the common practice to place each colony with the bottom board directly upon the ground, many are learning the value of a good hive stand. It is usual to paint the beehive once when first put into use and leave it to weather away after the first paint has worn off. The more progressive, however, keep their hives painted, as this adds much to the coolness of the colony in this climate and adds many years to the life of the equipment.

Foulbrood, the scourge of beekeeping in so many parts of the world, is to be found here in many places. The frequency of its occurrence increases as one nears San Antonio and other large centers for the distribution of honey. However, much is being done to rid the state of this disease, which has brought such a heavy toll of loss to so many beekeepers. The state apiary inspection force, headed by Mr. S. E. McGregor, Jr., is conducting a cleanup campaign throughout the state and is burning up all infected colonies which it finds. Some northern beekeepers may doubt that diseased colonies are gotten rid of in this way, but only a few days ago a beekeeper living in an adjoining county informed me that all of his diseased colonies, to the number of eight, were burned up completely by the inspection force. Fortunately, we have not had the disagreeable experience of having to burn any of our colonies, as we have never had foulbrood. However, some large apiaries have been almost completely burned up to get rid of the disease. Before the state began this practice there were several beekeepers in this section who did not know what foulbrood was and who had their bees, in some instances, entirely wiped out by the disease.

Since the expansion of the industry of shipping package bees, many beekeepers here are finding it more profitable to devote their time to the shipping of bees rather than risk the uncertainties of a honey crop. Profits from the package business usually net more than the honey crop and are much more certain. Economic conditions may result in making this the chief occupation of the beekeeper of the Southwest.

Why I Dislike Sections

By L. H. Cobb

Using sections for honey storing will not appeal to everyone, and there are a good many points against the practice, even for those keeping bees as a business. For farmers or those with a local market, even when honey is to be sold in the comb, it is not profitable or convenient. There is much more work about preparing a super of sections and foundation starters, and unless used at once they are not kept clean and in shape for the next year. Frames that are not used do not change much from keeping over, and it is easier to prepare them, and quicker, so a super need not be fixed until wanted. The bees will gather more honey in the frames, I have found, for in hives of like strength they gathered in the frames when they would do nothing in the sections. In a slow flow I have always found it hard to get them to do anything in sections, even when they would gradually fill frames. When nectar is coming in strong, I did not notice much difference in their working and storing, but did not test as to amount. Considering that in the best years there are periods of slow flow, and in poor years seldom more than short periods of good flow, it stands to reason the frames will deliver the goods practically every year.

When selling as cut-out comb honey, frames yield just as fine a product as the sections, and for local demand will sell about as well. I have sold from frames both as comb, mixed, and extracted. Sections are a little nicer to sell, when wanted as comb honey, but not enough to make up for the extra work fixing a new super of sections after emptying one. The frames need only to have the honey cut out to within a half inch of the top bar and put back in the hive to be filled again, the strip left making them build straight combs. It is really expensive to cut out honey, for the comb costs a lot of honey in the building. If the bees have empty combs instead of just frames, they gather on a slower flow and much more honey during any flow. Some authorities claim it takes twenty pounds of honey to make one pound of comb, and in the foundation for an ordinary hive there is between one and two pounds of wax. If it takes twenty pounds of honey to make as much as in an eight-frame hive set of full foundation, you can see it does not pay to let bees do it. Any extra comb building we make them do costs us dearly, and as there is no food value in the wax, but only in the liquid honey, there is no valid reason for using the comb for food save that it suits the fancy somewhat more. I like comb honey myself, but I like extracted just as well. Extracted honey can be sold for less money and thus gives more food value for the money than comb.

Another point is that with sections there always are a good percentage that are not filled full or sealed nicely and must be discarded or sold at a discount. Extracted honey will be used no matter how full or how unevenly sealed, if ripened up well. The waste of comb in partially built sections that get soiled and the honey that is stored in unsalable sections eat into the profits rapidly.

A Favorite Drop Cake

1-3 cup extracted honey.
3 tablespoons butter.
2 eggs.
1 1-3 cups flour.
1 1-3 teaspoons baking powder.
Pinch of salt.

Mix ingredients as they are given. Use one-half teaspoon of batter for a cake. A nut meat pressed on top of each cake improves them, and sometimes I use raisins in them.

Bake in moderate oven about ten minutes.

A Japanese Apiary (Okushima), June

Moving Bees 1700 Miles In Japan

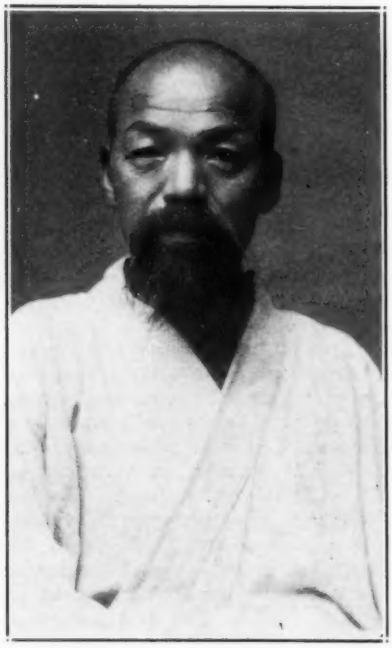
By Yasuo Hiratsuka

MR. S. HYODO is one of the bravest migrating beekeepers in Japan. Some years ago he was located in the northern part of Japan, but went to Kyu-shu, the southern-most territory, where he moved his bees over short distances for the honeyflows. This he did for some years, moving back and forth over small areas, covering some ten miles or so. In the year 1924, however, the honey crop was a failure and he decided on moving his bees 1700 miles to better pastures. For the average beekeeper, his adventure looked like an impossibility.

His location was on Sakura-jima Island, where he had eighty-two colonies. At the last of May his honeyflow from Mikan (Citrus Aurantum) and Haze (Rhus Suceedanea) was so short that his bees did not get enough stores to last them while moving. He equalized their stores, however, so that they had about fifteen pounds on the average, taking care that they had only small amounts of unsealed honey. He nailed the supers and hives together with strips of wood and heavy nails. Each hive had a ventilating window in the front, one in the back end, and one under the bottom, covered with wire cloth.

On the first of June it was rainy and windy, and, the bees having been previously prepared, he wanted to take advantage of this wind to use a sail boat. The load was too heavy, however, so he telephoned to Kagoshima for a larger craft drawn by a motor boat.

The boat came. At five o'clock he arrived at Kagoshima and loaded



Mr. S. Hyodo

all his bees in the car, which left at 8:30 p. m., Mr. Hyodo with it.

The train traveled northward slowly until it arrived at Kumamoto, a distance of 115 miles from Kagoshima. On the second day they made the journey more rapidly, but the roadbed was so uneven that the train swayed badly and the bees had to be lifted on ropes to prevent disaster.

It was hard work and finally Hyodo fell asleep. He says he felt as though his feet were sticking out of the car, but he could not get up because he was so sound asleep, although he knew he was in a dangerous position. Upon awaking he found that the door had been torn off the car and he was sleeping against the side of the car near the opening. It did not take him long to shake off his sleepiness!

In the morning the train arrived at Moji and an examiner came to tell him that he could not go on further without a door. They took his car back to Ohosato Station and the bees all had to be reloaded on another car, which, if anything, was more dilapidated than the previous one.

Reloading was a difficult problem. The bees began to hum in the hives badly; some of them came out through the small cracks. The men in the station were very much afraid of the bees, but finally they were reloaded and started again, arriving at 3:30 p. m. at Shimo-no-seki. At five o'clock they went on toward Himeji, where they arrived at 3:30 the next afternoon. From there they went northwardly to Ayabe.

On the fifth day, leaving the sta-

Mr. Hodo's apiary in Nayodo, Hokkai-do

tion master to attach his car to the train at six in the morning, he took another train to Tsuruga to consult the station master there relative to the remainder of the trip. This consultation was not very satisfactory, however, because the station master seemed to be particularly cool concerning the bee business. Meanwhile, Hyodo waited for his bees, anxiously, minute after minute, hour after hour. The car should have arrived at eleven, but it did not come. He supposed that it was detached enroute and regretted that he did not come through with his bees. At last, at half past three in the afternoon, the car came, and at seven he started off again, until, on the morning of the sixth day, passing over the Kanazawa at sunset, he arrived at the Itoigawa station. On the seventh day he reached Niizu in the early evening and traveled all night to Wakamatsu.

During the eighth day his bees, which had already traveled seven days, began to die. He found quite a number of dead bees in the hives, and numbers of them in a very much weakened condition. He must get on more speedily, and he found a station master at Koriyama kind enough to wire ahead for transportation directly so that he could make swifter progress.

On the tenth day he arrived at Aomori, where the bees were carried over the Tsugaru Channel and unloaded, when it was found that so many dead bees were accumulated at the bottom that all the remaining bees would be smothered if they were carried through in this condition. So he asked the station master if he could not leave the bees a day or so at this place. This was granted and the station master made some of his men carry the bees out to a location.

The entrances were opened and the bees allowed to clean out the dead and take a cleaning flight. Some were fed syrup, as their stores were low. Two colonies were dead and five or six hives were nearly so, having only emerging brood left. Near the station were fields of white clover, on which the bees worked.

After four days at Aomori, the bees were again loaded and started in the evening over the channel, went on to Hakodata and to Iwamizawa, and thence on to Nayoro, where they were to be located. They were unloaded and arranged in their new places. Clover was beginning to bloom and the bees at once went to work.

So here was Mr. Hyodo and the bees, having traveled 1700 miles, using a full thirteen days, and a four days' rest at Aomori. I am wondering if, in America, you have anything like this kind of migration?

Mr. Hyodo is one of our oldest beekeepers. I enclose a picture of him which was taken recently. The other picture shows the new apiary located at Nayoro after the long journey from the southern end of Japan.

Map of the route taken in the long migration

Japanese apiary and garden

Personal Recollections of the Editor

Cellar Wintering

WHEN we arrived in Illinois, in 1863, homes were neither costly nor elegant. My father built a log-house, 18 by 18 feet, with a small lean-to, for kitchen. Under the log-house he had made a hole in the clay soil, 12 by 12 feet, for a cellar. This was the first cellar we used for bees. But as we had to keep in it our stock of potatoes, turnips, apples, etc., there was very little room for bees. He kept there only such weak colonies as he judged could not spend the winter out-of-doors and live; usually only two or three, piled in a corner, behind a curtain made with gunny sacks.

For two or three years he tried silo-wintering. In the November, 1867, American Bee Journal, page 91, he gave his method of digging a ditch of the proper width for a row of hives, placing two 4-by-4-inch beams at the bottom for the hives to rest upon, and making air flues with four carpenter's laths. The hives were covered with a sloping roof of old boards, then straw, then earth. This method succeeded very well, for he reported, page 58, that he did not have ten dead bees per colony. But one winter, probably 1869, the weather was so mild, there was so much rain, that, in spite of good drainage, the hives were wet all winter. The combs moulded, the honey became laden with moisture, and many bees died. This ended our silo wintering.

In 1875 I was married, and as my father did not believe in hiving the swarm with the old colony, he concluded that he had best build himself a new home and let me keep the log-house. So he did the swarming, himself. When he did this he built a large cellar, 22 by 32 feet, and divided out a portion, 12 by 22, for a bee cellar. As the cellar had a hot-air furnace, it was necessary to isolate the bee cellar from the main part with a heat-proof wall. This was made of a four-inch partition filled with sawdust.

In this cellar we wintered as many as 120 hives of bees for eighteen successive years. But in our part of Illinois there are usually so many really warm days, in the middle of winter, that one feels sorry for the cellared bees when the outdoor bees take a flight. If every winter was hard, with five to six weeks at a time without a flight, it would be desirable to winter always in the cellar. As it is, we found that it hardly paid to put the bees away. But if I could find a real weather prophet, I would be sure to put the bees in the cellar when he predicted a long, hard winter.

We first brought in our bees indiscriminately, without marking the hives at all, and brought them out in the same way. But here is one of the rare points on which I could not agree with Dr. Miller's conclusions. Dr. Miller said that bees did not remember their location when brought out after four or five months. But they do; I have had evidence of it and have already explained it somewhere. It will not hurt to repeat it. See farther along.

The cellar was arranged with joists to support the hives in tiers. These joists were kept about a foot from the floor, for we noticed that the bottom hives, next to the floor, would often have mouldy combs. On the joists a row of hives were put with their bottom board, but with the hive body raised about a half inch, for ample ventilation. Then hives were brought in without their bottom board or their covers, just an oil-cloth or a straw mat between the colonies, piled up about four or five high. The bees were so free that, during one winter, a queenless colony (so we assumed it to be) joined the colony on top of it and the hive was found entirely without bees in the spring.

At first we took the bees out as we had brought them in, indiscriminately, setting them just where it appeared most convenient. But, one spring, there was a big excitement; some hives were mouldy, probably because the food had been too watery, and the bees drifted from one colony to another, deserted the less dry hives and joined the colonies of the drier hives. After that, we took out less bees at a time. It had been our habit to take them all out, in the early morning of a promising day, about the time of soft maple bloom, and let them all fly at once. When we changed our method it became necessary to close up the hives that were first taken out, at the time of taking out the next batch, because those early removed bees would start robbing the others before they recovered from their bewilderment. I do not believe this trouble is as much to be feared in a country of very ripe honey, such as Quebec, as it is in a country of fall honey like ours. The late gathered honey is sometimes not all capped and is too watery for good bee food.

Now, to explain how we found out that some old bees positively remember their location; we had adopted the method of leaving each hive bottom and cover on the summer stand, removing only the hive body to the cellar. So when we took them out we would return each colony to its exact spot in the apiary, without fail, for they were all numbered. Then the farthest away from the cellar door would go in last and come out first, regularly. It is also necessary to state that we kept two kinds of hives. We had some sixty colonies in frames about 12 by 12½, what was called the American frame, but in our case it was due to the fact that father kept bees in the Debeauvoys frame, at first, which was of about the same size as the American. Then we had most of our bees in Quinby hives, modified, now called Dadant hives. The apiary is cut in two by a road. Well, one summer, in hiving swarms, two colonies were hived in American hives which should have been placed on the right-hand side of the road, among those of the same kind, but were left, by neglect, among the Quinby size hives, on the left. So when winter came we concluded that it would be best to remove them, at the end of cellar wintering, to the side of the apiary where they belonged. We did. But my father had forgotten the incident. On the day when the bees were taken out he spent, as usual, a good part of his time in the apiary. He came in, a little before noon, looking puzzled. Said he: "Some bees, on the Quinby side of the apiary, are behaving strangely. They are flying about two spots as if they had been fed there and were looking for more feed. Come out and help me find out what is wrong."

I went, and there were the old bees of those two colonies hunting for their homes where they were the previous fall. We brought the hives back to the spot and it was a pleasure to see those bees recognizing their hive. They were moved again, as soon as the bees had all alighted. They did not get lost any longer; evidently that fright they had, had given them a lesson, and they did not leave their home again without carefully examining the spot. But this convinced me that, even against Dr. Miller's opinion, I could assert that some of the old bees remember their location of the previous fall. So if we do not want our bees to drift, it is necessary, in my opinion, to put the hives back where they were previously.

This is not absolutely indispen-

sable, for only a few bees actually recognize the old spot; but if there is any occasion for confusion, this confusion is multiplied by the number of bees that seek their home where it was. After a very good winter, when the colonies are clean and have no cause for excitement, the previous location matters little. That is probably why Dr. Miller never noticed anything wrong, while we did.

Perhaps it may be well to say something about cellar temperature. Charles Dadant was an exceedingly particular man about all that he undertook. So one of the things he did was to buy a thermometer for the bee cellar. He examined it at least once a week. He was perhaps one of the first to say: "Find at what degree bees are the quietest and keep them at that degree." In his experience the proper degree was around 45 F. When the colonies became restless he would either raise the temperature by giving air from the furnace-heated main cellar or lower it by opening one or both of the two windows in the bee cellar. Our main difficulty lay in too much warmth, as this could not be remedied if the outside temperature was high. We tried cooling the cellar with ice. But it took too much ice and the bringing in of it caused too much disturbance to the bees.

Another matter he tested was an attempt to dry the air of the cellar by the presence in it of "calcium chloride," which has "great avidity for water." We bought a lot of it and kept it in the bee cellar. But, in spite of its "avidity for water," it did not dry the air of the cellar in a perceptible way. Many new things are just as impractical as this was.

We have finally abandoned cellar wintering for this latitude.

There is no need of a very expensive bee cellar in cold regions; let me give the description of one which I visited and in which bees were wintered safely every year.

In eastern-central Minnesota there lived at one time an old Belgian by the name of Parent. His home was only a short distance west of the Millelacs country (Millelacs is French for Thousand Lakes). He had come there some seventy-five years ago, had settled where the land was cheap but hard to improve on account of the brush that had to be grubbed out. When I visited him, about 1895, he had about seventy-five colonies of bees, with which he was very successful. His wintering cellar was just a hole dug into the hill, on a level with the apiary and back of it, so that none of the hives was farther than seventy-five feet from the cellar door. The cellar had been walled with cedar logs, and roofed similarly. Dirt to the depth of about four feet, taken from the cellar, was piled on for a roof, with some sloping rough boards to turn off the rain. The door, on a level with apiary, had an antechamber with an outer door; the latter was just a rough door and the antechamber was filled with straw during cold weather. A wooden pipe about two inches square served for outlet of air at the top, and a similar one placed horizontally brought fresh air in from the outside at the bottom. In this cellar he wintered his bees with absolute success, for his honey crop was usually of best quality and his bees very rarely suffered from a six months' confinement.

Mr. Parent had come there, with his wife, direct from Belgium. They had raised a family of ten children, who were all married and settled in the immediate vicinity and growing good crops. They had children themselves, and grandchildren, so it made quite a colony. Out of curiosity, I asked him how many there were of them, with sons-in-law and daughters-in-law. Said he: "When we are all together, there are sixty-four of us." A neighbor lady who happened to be present thought to correct his statement, and said: "Why, Mr. Parent, only ten days ago I asked you the same question and you said sixty-three." The old gentleman, with a humorous glitter in his eye, replied: "That is true, but the stork brought another little beekeeper since. We are, indeed, sixty-four, grandparents, fathers, mothers, sons, daughters, sons-in-law, daughters-in-law, grandchildren and great grandchildren. The world is not yet coming to an end."

A very good bee cellar is described on page 440 of the American Bee Journal for September, 1926, by C. S. Engle.

Granulated Versus Liquid Honey

By Fred C. Bamis

IT has been a matter of wonder to me that the American honey producer is always at such pains to keep his honey from granulating, when such an occurrence is a demonstrative guarantee that the honey is absolutely pure and unadulterated. This was brought to my mind again on reading the editorial remarks contained in the September, 1926, issue, in which an extract from the "Canadian Poultry World" for June is quoted, that we in New Zealand refrigerate our honey in order to secure its granulation.

I do not know from what source the "Canadian Poultry World" secured its information, but I do know that whoever gave such information (?) did not know much about the industry "down under" in New Zealand.

I suppose no other country in the world has copied American methods of beekeeping more closely than we have, right up to the actual marketing of the product, and there we go on absolutely different lines.

I think there must be a very good reason for this, and it occurs to me that the honey itself is the cause, because it is evident that, with a little care, the American can keep his honey in liquid form, while we in New Zealand cannot (except in isolated instances) keep ours from granulating. I have known cases where in four days from extracting, granulation has started in the tank, and more than once where a special rush of work or a lack of containers has held up the emptying of the tank, that it has been necessary to get into it with a spade and get the honey sufficiently liquefied to allow it to run. I will state here that such an occasion as this led to an interesting discovery relating to granulated honey, which I will touch upon later on.

You are probably aware that no honey can be exported from this country unless the brand is registered with the government, graded by one grader for the whole of the dominion, and the cases must bear the official government grader's stamp before the Customs Department will allow it to be shipped. The regulations for the export of honey contain the following clause: "All honey for export must be granulated." Honey sent to the grading store in a liquid condition is held over until such time as it conforms to the regulations, and if, as pointed out previously, it does not granulate it cannot be exported, and the owner has to remove it and dispose of it through some other channel.

It has been proved conclusively (with very few isolated cases) that honey raised in this country and allowed to ripen on the hives will attain a specific gravity of 1.420, which is the standard of moisture content adopted for export purposes, and anything showing a higher specific gravity is turned down by the grader, as experience has shown that such honey lacks keeping properties and will ferment if kept any length

of time; and such honey will only granulate as a rule to a "mushy" state. One other reason for the rule of only granulated honey for export is that in this state it travels far better, and, provided that it is packed according to regulations—two sixty-pound tins in a case, screw lids, ½-inch lumber, top, bottom and sides, and 1-inch ends, bound with two wires in center—the possibility of loss during transit is reduced to a minimum.

So you see, if Nature had not been kind in assisting us to granulate our honey, we could never have built up an export trade under the existing regulations.

But it was found that in some seasons and districts the honey would not granulate in the tanks in sufficient time to allow them to be emptied for use again in a season with a good honeyflow, and as it could not be sent to the grading stores in liquid form, we were "hard put" to find a solution of the difficulty. It was then found that by adding a "starter" of granulated honey and stirring or paddling this well, into the tank of liquid honey, the granulation of the whole tank was accomplished in a few days if the whole was paddled every day. My own practice was to keep a sixty-pound tin from a previous season for this, and, when required, heat the honey so that it would run out of the tin in "mushy" form and thoroughly incorporate this with the liquid honey. It was during this stirring process that the interesting discovery was made. Some honey raised here, particularly that from the bush flora, will take some time to granulate, and when in such state the granules are almost as large as granulated sugar and are coarse and rough to the tongue. Now, if you "paddle" this honey during the process of natural granulation, you will find that not only have you lessened the time of granulation but you have by "paddling" broken up the large granules and produced a honey with a soft, even grain, which has improved both appearance and taste. I was able to demonstrate the above at a conference held a few years ago after a big discussion had taken place in the beekeeping press on the merits and demerits of "paddling" or stirring honey. I showed two samples taken from the same vat, one before paddling and allowed to granulate naturally and the other assisted by "paddling"; and even those who were averse to the idea admitted at least that honey raised in my locality benefited by "paddling." You can, however, overdo it; you can make the honey of the consistency of condensed milk, and so render it unsuitable for export trade, but I have yet to find another "spread" that will tickle the palate as much as a generous layer of soft granulated honey. There is another form of granulated honey on the market here, but it can only be carried out in climates that are cold and dry.

In the southern portion of the country the honey granulates naturally and quickly, and while it is in a semi-granulated form it is run into narrow boxes which have four tin partitions and hold about sixty pounds.

These are stacked one on top of the other in the honey room until the winter, when the sides are unscrewed, the boxes taken apart, the tin partitions taken out, which leaves you with five slabs of hard granulated honey. These are cut by piano wire stretched over a metal frame into both half-pound and one-pound pats, wrapped in parchment paper and sold by the retailer just like a pound of butter. But as can be easily understood, this sort of marketing can only be done during the winter, and care must be exercised to keep the pats from being exposed to heat. But I'm going to say this: that for the keen enjoyment of eating a good clover honey with all its unique flavor, there is no other method comparable with cutting off a chunk of granulated honey in this form and allowing it to melt in your mouth. Your candies, fondants, creams and chocolates are "poor stuff" after it.

In this form small parcels have been sent from here to England as ordinary parcels and have reached there in solid form, and I feel certain there are many places in America where it could be worked successfully, and I have no doubt it would open a payable market.

I may say that I have tried to hasten granulation by storing honey continuously in a freezing chamber, also alternating it day in and day out, without much effect. Certainly this method is not as quick as "paddling" the honey.

New Zealand.

Bees In a Cotswold Village

By Rev. A. A. Evans

I have been enjoying some tramps among the fair villages of the Cotswold. Each day brought not only its change of scene, but its little adventures and pleasant intercourse with men and women at work in the fields and among the famous orchards of its valleys, and I found much wisdom along the wayside. Passing through one of the most charming of villages, with cottages of grey stone, ancient mullioned windows and picturesque front gables, I noticed just over a narrow brook which flowed for a mile or more clear and limpid by the village road, and between it and the cottages, a group of beehives neatly painted in white and green. Working among them was a bent old man of many years, his cheeks ruddy as the apples overhead, and his hands gnarled as the tree trunk. He proved a rustic philosopher with original views concerning everything in heaven and earth. He was a delightful old man, humble, thoughtful, deferent, but certainly reflecting no other people's opinions. He told me he had kept bees for over sixty years and in his long backward outlook he could see a great change, and for the better, in bee-keeping. Far more people kept bees in Gloucestershire than in his boyhood days. Then, with his half-dozen straw-made hives, he was considered almost a curiosity in the village.

In those days the most hard-working bees, those, that is, who had collected the heaviest weight of honey, were smothered over a sulphur pit. The weakest and idlest strains were allowed to survive. There were those, he said, who came and argued with him that the beehives, with their movable frames, were unnatural things for bees and induced dysentery, foulbrood and other bee afflictions.

On this the old man poured scorn. "Nay, I tell 'em, its idle beekeeping as does that. Show me a lazy bee man, as keeps bees in any old pot or pan, and troubles hisself about nothin' but a gain o' honey, and I'll show you a man who's a center and cause of all the nasty complaints as comes to bees. He's a plague spot in his district, is that man."

My philosopher had also strong views on the ethics of extracting honey from brood frames. It was a wicked offense, he held, against not only bees who made the honey, but God, who made the bees. Honey from supers was lawful and right. Take that and be satisfied. "Mor'n that marks the greedy man, an' what the Scriptur' calls a son of Belial."

Sugar feeding was also in his category of sins. "If it be a bad year for honey, at least let 'em keep what they've gathered. Its their own, ain't it?"

The wheels have moved since his boyhood, and methods and also moral views have traveled on.

It was like listening to a voice from out the distance of other days and other ways. England.

Sense of Odor Versus Sight

By John Robertson

Now that the bees are once more packed into their winter quarters and the tension relaxed a little, beekeepers can find time to swap stories and relate new traits in bee eccentricities (?).

Here is one which occurred during the early part of the season, and impressed me very much. It became my duty to feed over two hundred lots of bees some time before the honeyflow commenced. As this would have entailed a considerable amount of labor by the ordinary method, trough feeding was resorted to. To prevent drowning, the troughs were partially filled with machine planer shavings, and then three or four buckets of syrup poured into them. These troughs were filled several times a day. While this feeding was going on, you can imagine there was considerable evidence of life in the apiary and near vicinity. After the first day of this feeding, my attention was drawn to the bees visiting the workshop and sheds, as well as any little clumps of planer shavings lying about the ground, and as this class of shavings is used extensively for packing, there is always some of it lying about here and there.

Now the machine planer shaving is quite distinct in appearance from the hand planer shaving, the first being short and more like chips, while the latter is long and mostly in the form of spiral springs. Both shavings, being from the same wood, will have the same odor. During the whole of the feeding of these bees, wherever a clump of planer shavings was found, there also was found the quota of searchers, while not a single bee frequented the hand planer shavings, although they were lying about in close proximity to the planer shavings.

The inference one would most naturally draw from this would be that the predominant guiding factor in the bee on foraging expeditions is the sight sense and not the odor sense. Naturally there were times between the trough fillings when the syrup would run down through irregularity of attention. Then perhaps the first search for new fields would begin, but after the bees had once started to forage, the visits to all probable sources of supply were kept up, and continued during the whole of the time, whether the troughs were empty or full. The whole apiary evidently knew by sight the appearance of the source of supply, and were out to fill up; and wherever planer shavings were found, there also were the bees.

The remarkably short time it took those bees to empty the troughs makes me rather skeptical regarding the number of visits bees are said to pay in a day (by some authorities) to the field and separate flowers while filling up; even making due allowance for the short distance they had to travel to the source of supply.

One point to be strictly observed in outdoor feeding or supply of a drinking source for the bees is that there must be strict regularity in the filling up of the troughs.

Another point which was very evident was the short time it takes for the whole apiary to become aware of a new source of supply. The theory of individual telepathy is too slow. There must be some other method, peculiar to their communal life, to explain this and a few other remarkable traits in the internal workings of the hive. — Scottish Beekeeper, November, 1926.

Lewis Comb Honey Contest

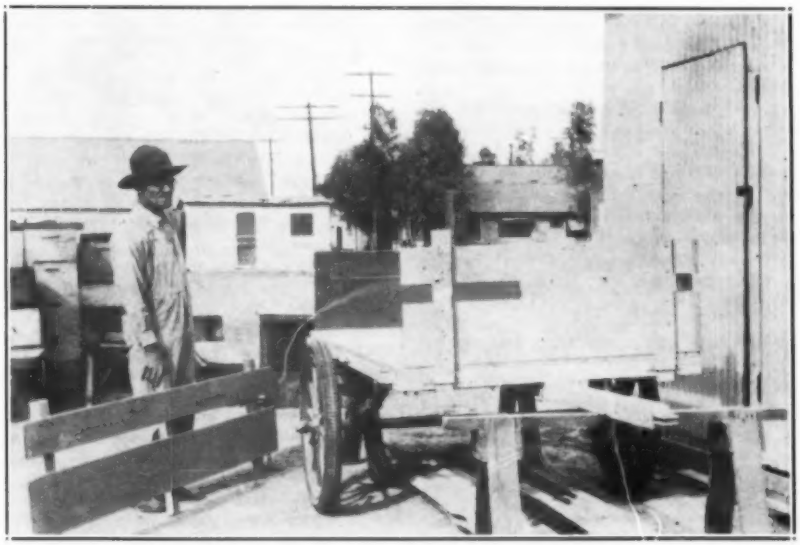
Much interest was manifested in the G. B. Lewis Company comb honey contest. Six hundred dollars in cash prizes were offered, and three hundred beekeepers entered. The first prize was captured by J. F. Brenckle, of Northville, South Dakota; second prize by L. O. Finn, Hope, North Dakota, while the third went to J. F. McPherson, Edgar, Montana. Next in line were Earl Alexander, New Paris, Ohio, who won fourth place, Frank Hill, Sabetha, Kansas, fifth, and Frank C. Lalor, Barrington, Illinois, sixth. The $25 packing prize was won by T. L. Roberts, Moorhead, Minnesota.

E. L. Sechrist, of the U. S. Department of Agriculture, judged the honey, and E. H. Kirchner, of the American Railway Express Company, judged the packing.

Queen Marie Ate Bread and Honey

Grand Forks, N. D., Nov. 12.— When Queen Marie of Roumania passed through North Dakota recently it was possible for her to play the part of the queen in the Mother Goose rhymes who was "in the pantry eating bread and honey." She was presented at Fargo with some honey which had won first prize in a national competition and which had been made by bees in the Red River Valley. When her special train reached the capital of the state, Bismarck, she was welcomed by Governor A. G. Sorlie, who offered her a loaf of bread made from hard spring wheat grown in the Red River Valley and milled at the North Dakota State Mill at Grand Forks.

A Useful Trailer



SINCE the auto has come into almost universal use, many beekeepers use a light trailer for hauling empty hives and supers to the outyards, as well as for hauling home the honey. The one shown in the picture is used by J. H. Porter, of El Centro, California. It will be seen from the illustration that any one of the four sides of the box can be readily removed, thus making it easy to load or unload.

Where roads are good, the trailer is used with satisfaction. It is of low cost and gives much service with small outlay for repairs. Over rough roads, however, it makes a heavy strain on the car, and under such conditions is of doubtful ultility.

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

BEES DYING IN PACKING CASES

I have 116 hives packed in tar cases, two hives in case. They were packed in November, around the 20th. They are ten-frame hives and good hives. I left the bee-escape board on, but put a piece of section over the hole, took the outer cover off. Now, I used two-ply tar paper and they have from four to seven inches of packing all around them and from eight to twelve inches on top; no packing on bottom, but I put three pieces of old tar paper on the stand and then set the hives on the paper and packed them good with planer shavings. I cut paper out for entrance, size ⅜x2, and some have entrance ⅜x3. Some hive entrances are wet all the time, and when I clean out dead bees with a wire, the dead bees are just soaking wet; they seem to die fast. The colonies are very strong with young bees, as I requeened them all about July 10, with good queens. They were all fed on sugar syrup in October and early November; I gave them five or six ten-pound pails. Do you think that will last them until early spring? I make it two sugar to one of water. I have no windbreak, but they are sure well packed. I am removing the section off the escape holes and putting a piece of burlap over them, and put packing back. Should I enlarge the entrance? This is my first outdoors wintering; I always wintered in cellar. MICHIGAN.

Answer.—You certainly have the bees well packed, but you probably have too little room for evaporation of moisture. It is quite likely that they were fed too late to evaporate much of the moisture in the food. Although the proportion you used, two to one, is correct, yet, even with that, they need to evaporate some of the moisture in the food.

If you find them still wet, give them greater opening at the entrance, or, better yet, remove the escape board and place over the combs some cover made of burlap, then cover again with the packing. You might try it with a part of the colonies and see how they fare. The only objection to doing this is that it will stir them some. If you do it, you will not need to enlarge the entrance, as the evaporation through the top, when the burlap is over the combs, will create a sufficient current. The tar paper prevents any evaporation. If there is still some moisture, after you put on the burlap, enlarge the entrances.

TIME FOR FEEDING AND TRANSFERRING

1. I have several colonies of bees in old box hives. I wish to know how to feed them and I don't know how. The weather is very cold and they do not fly out very much. Some I have just bought, and all of these bees are black bees and I wish to know what time in spring to transfer them. Our main honeyflow is May 1 to 15; the next is July 1 to 15.

2. I have just started in beekeeping. I have twenty-four hives of Italian bees that I requeened last August 15. How can I keep these bees from crossing? I want to requeen the old box hives; they are black, as I have said. NORTH CAROLINA.

Answers.—1. To feed bees in box hives, in your section of the country it is only necessary to make a hole or two in the top of the box hives, say two inches across, or more, and invert a can full of syrup on top of these holes after having pierced some small holes in the lid of the can opposite the holes in the hive. The bees will suck the syrup. To make syrup, use two to one of cane sugar and water. In cold countries like Illinois, it is necessary to feed earlier or to put the hives in the cellar, bottom side up, and put the feed in inverted cans on the end of the brood combs.

We wait for transferring bees until fruit bloom, in spring, because that is the time when they have the least quantity of either honey or brood, so that it is easier to transfer the combs into movable frames. We give the details of the work in a bulletin which sells at 10 cents. You can transfer at any time in the summer if you do not aim to save any combs nor brood. This means that you just drive the bees out and put them into another hive. You may also save the brood, by putting the transferred hive on top of the new one, with a connection between the two. But the transferring of all the good combs, in spring, is much better.

2. It is impossible to keep your bees from crossing, except by taking care to remove all drone combs from the colonies of black bees and rearing drones as much as possible in your Italian colonies. Some English beekeepers say that the queens mate usually with drones from their own hives. That is not our experience. When you remove the drone combs, put worker comb foundation in their place.

BEES OF ASIA MINOR

Can you tell me whether or not the bees of Asia Minor, around the historical region of Troy (Mysia), were yellow as the Italian or Cyprians, or is there any kind of bee there which might be described as "golden," as Tennyson does in his "Oenone"? GEORGIA.

Answer.—I do not know positively what is the race of honeybees in Asia Minor. In the north part of the Caucasus, the bees are brown, not yellow. But we are told that between certain ranges of mountains, in Lenkoran, there is a race of yellow bees. The bees of Greece are said to be more or less mixed.

Della Rocca, who wrote a book on beekeeping in the Island of Syra, in the Greek Archipelago, does not say anything about the color of the bees, and the inference is that he did not find them different from those of France, for Della Rocca was writing in the French language.

Thus I have no positive knowledge. But my impression is that the bees of the peninsula of Asia Minor are either of the common race or slightly mixed with the yellow bees.

BEES STARVING IN CELLAR

1. Is there any outward sign when bees are starving in the cellar? I had one starved and all were dead when I found them. They are piled three high, so I cannot look in at the top. I neglected to feed last fall, and this is my first experience of starvation.

2. When making hard candy, should it be stirred while boiling or not? I stirred it and it set like loaf sugar, instead of being transparent. Will it not burn if not stirred? SASKATCHEWAN.

Answers.—1. About the only sign you can see to signal starvation in bees while in the cellar would be to see some starving bees dragging around, looking forlorn and empty. It is a bad job to have them short of stores in the cellar. It does not require much to feed them through, only about ten pounds. If you have to feed when they are piled up, a piece of sugar candy laid on top of the frames is the best thing.

2. Yes, certainly you should stir it. We have published the method hundreds of times; we can publish it again:

To make candy for bee feed, add water to sugar and boil slowly until the water is evaporated; stir constantly so that it will not burn. To know when it is done, dip your finger first in cold water, then in the syrup. If what adheres is brittle to the teeth, it is boiled enough. Pour into shallow pans, greased a little, so that it may not adhere to them, and, when cold, break into pieces of suitable size.

HONEY RUNNING AT ENTRANCE

We have some trouble around here in some hives; the honey seems to be running out at the entrance. I saw some moisture at the entrance, but I thought it was water, but it tastes sweet. The hives are packed for outdoor wintering. I had my bees packed in the same way last winter, but I did not see anything like this.

The weather has been cool right along, so that the bees did not get much chance to fly. The bees are in a Modified Dadant hive. My neighbor has the same trouble in some of his standard size hives. SOUTH DAKOTA.

My guess in regard to the honey running out of the entrance of your hive is that the bees harvested honey very late in the season, too late to seal the cells. The result was that this honey gathered moisture from the air and ran over out of the cells. It must be much less sweet than the real honey, because it contains so much water. We saw this phenomenon once or twice in past years and there was always more or less diarrhea in the colonies, owing to this. It is of some importance to extract honey that has not been sealed, when cold weather is about to begin. But there are many winters when the air is so dry that there would not be any danger of its gathering any moisture in the hive. Usually, also, the bees consume it first.

GIVING MOULDY COMBS TO BEES

1. I have ten frames of honey which I overlooked in some way this fall. They are large frames, and they are now all mouldy. Can I give these back to the bees in the spring and not have it do any harm to them?

2. I also have a full depth hive body of frames in which a colony of bees starved to death. This is a colony I had in the country and did not watch as I should have done late this summer. There are about seven frames well filled with dead brood; these frames are also mouldy, and I wish to know if it is necessary to clean out this dead brood before giving them to a strong colony in the spring, or would a strong colony clean them up without any ill effect? This colony did not die of any foulbrood; this I am sure of. MASSACHUSETTS.

Answers.—1. Mould upon combs of honey will not do any damage, and the honey may be given to bees. But I would prefer to dry them up before giving them to the bees. Put them in a warm, dry spot for a few days, first. Where did you keep that honey to have the combs become mouldy? In the cellar? A cellar is the worst place in which to keep combs or honey.

2. The combs of a colony that starved to death are all right to give to a healthy colony in spring. But I would hesitate to give to bees a lot of dead brood, even if that brood died of starvation and not of disease. I would much prefer burning up

those seven combs and giving the bees some new frames with comb foundation, even if it is more expensive.

HIVE FOR TWO TIERS OF SUPERS

I am now using the regular ten-frame hive, but find that during most years my stocks of supers become so high that I always fear a wind may blow them down. This has happened a few times.

Now, what I should like to know is this: Could I successfully use a brood chamber wide enough to hold two tiers of supers instead of one, as I now use them? Do you know of anyone who has used such brood chambers? SOUTH DAKOTA.

Answer.—Two stories of supers, in one full depth body, would be hard to arrange so as to hang the frames properly. Some people use full stories for supers. We do not like them, because the queen is likely to breed in them more readily than in the half stories. Some beekeepers use the Modified Dadant hive for brood chamber and the Langstroth full depth for supers. This is as good an arrangement as can be had, and it provides a large, broad base for the stack. Several of our disciples in Canada use it in that way.

If you space your combs, in the supers, 1¾ inches from center to center you will have less breeding in them. They do very well that way after they have been built out.

HONEY IN RADIATOR SOLUTION

1. At what temperature would the solution for car radiators, that you advocated in September issue, freeze, or doesn't it freeze at all?

2. Will honey freeze easier if boiled longer than three minutes?

3. What can be done with honey to keep it from candying? MONTANA.

Answers.—1. A mixture of three honey to two water, boiled and mixed with a quart of alcohol for each three gallons of mixture, would probably not freeze at the lowest weather temperatures, but would certainly get very thick. In that case, more alcohol would be advisable. The advantage of a honey mixture is that it does not heat so readily as an alcohol mixture, and therefore evaporates less.

2. Honey will freeze less readily when boiled; the only objection to long boiling is the thickening of it when cold. Also, if you heat it long after the alcohol has been added, the latter will all evaporate, since it vaporizes at a lower degree than water.

3. Heating honey keeps it from candying. But for general use, it is a mistake to keep honey from candying, as it ships better and keeps better when candied. It is always easy to liquefy it.

Overcoming Difficulties

Though unable to walk for twelve long years and confined to a rolling chair for ten of these years, Miss Ida Covington, of Route 1, Ellerbe, in Richmond county, North Carolina, is a successful business woman and is known throughout the section for her success with flowers and bees. She has not bowed her will in submission to her infirmities, but on the other hand has put forth renewed courage to become successful in handling her home work and in taking care of her bees and other outside interests.

"Once when I visited this home just before Christmas," says Mrs. Anna Lea Harris, home agent, "Miss Covington had some beautiful snapdragons in full bloom which she had grown in a protected place and had sheltered them for the Christmas holidays. She has beautiful flowers in season, and during the winter, when she cannot get about in the yard with her rolling chair, she does sewing for herself, her family and some for outsiders. Last winter she made over $35 in this way. Frequently, too, she cooks fancy, tasty dishes for the family if someone will get the materials for her from the pantry. Her chair is too wide to go through the pantry door."

But it is with bees that Miss Covington has made her greatest success. She started about six years ago with two hives in the old log gums. She tried this for about two years, when she decided there was no money to be made with such equipment, so she began to buy the modern frame hives. At the present time she has only eight hives, but from these eight colonies she has gathered and sold 600 pounds of honey this year.

She gives a wonderful example of how one can still find an interest in the activities of life though hampered by infirmities, and, according to Mrs. Harris, her life is an inspiration to the farm women of Richmond county.—Extension Farm News.

Tamboo Proso—A New Cereal

We have just received the following from one of our good old friends, Mr. J. D. Kaufman, Kalispell, Montana, who has had considerable experience with a new grain. We quote his as follows:

"We have now grown for the last two years the Tamboo Proso cereal. The threshers have not yet learned how to thresh it. They had too many concaves in their machine and really cut the seed up pretty bad—made powder of some of them. When I fanned it this winter I would throw the screenings out to the chickens, but I really threw it out to the bees, they were so thick on the screenings. The chickens weren't in it, and I soon noticed that they filled their legs with pollen. This cereal makes the very best breakfast food. I set some out in a pan, and you should have seen them work it. If we have any late swarms this coming season, I am going to try to pull them through with this breakfast food. This cereal is an all-around feed for man and beast; everything is fond of it, and this winter I found out that bees are fond of it, but I don't think it is a honey plant. If bees worked on it they did so when I wasn't in the field. I think everybody ought to raise this cereal, even beekeepers. It is a heavy yielder, will yield from 20 to 40 and 50 bushels per acre. If planted at corn planting time, it will beat corn a month in ripening. It is so much easier grown than is corn, and here it yields many more bushels per acre than corn does. Its protein contents are nearly 17 per cent. On land that produces 40 and 50 bushels of wheat, it will not yield any more bushels than that, but on land that only produces 20 bushels of wheat it will produce 30. If fed to cows and chickens, the cream cans and egg baskets will tell the last word. Will send you a sample of this grain in this letter. It only requires 20 pounds of seed to plant an acre, and can be drilled or broadcast and cut with a binder. The straw is better feed than lots of hay.

J. D. Kaufman.

Poison for Fruit Diseases

It appears that in England the poison used to destroy fruit diseases and fruit-eating insects is also killing the birds and the bees to such an extent as to make it difficult for the fruit to be fertilized in the blossom. The killing of the birds by the poison also increases the number of injurious insects. The British Bee Journal quotes the following:

"Nowadays you will see very few birds and no bees at all in the fruit districts. Spraying has either killed them off or driven them away. The result is that we have to rely on the wind instead of the bees for a dissemination of the pollen; and often when there is a favorable wind, it occurs after rain, with the result that the pollen is wet and too heavy to blow.

"One well known association has under consideration the advisability of urging its members to discontinue spraying during next season. If this is acted upon, the birds and bees may return, and possibly, given better weather, a revival in home fruit-growing may come. At any rate, beekeepers will be able to bring into use again their forsaken hives."

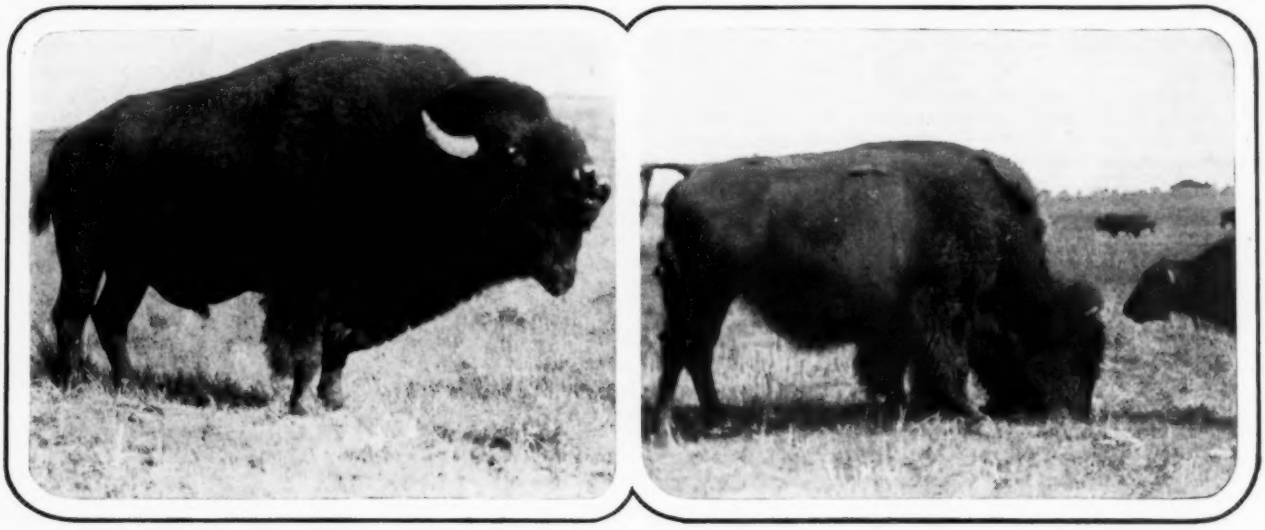
Lord Mayor a Beekeeper

A clipping sent us from the Washington Post (D. C.) reports the fact that Sir William Carter has just been elected Lord Mayor of Windsor, England, for the twelfth consecutive term. Sir William is also one of the best known beekeepers in Europe.

Our correspondent, Harold Kelly, who has bees at Forest Glen, Maryland, humorously signs the clipping as from the "Lord Mayor of Forest Glen, Maryland."

THE BEEKEEPERS' LOOKOUT

A CHANGING WORLD



The Indians called the honeybee the "White man's fly," and it is of interest to note that the honeybee spread westward in advance of settlement. Swarming bees moved west faster than the tide of white settlers, who moved slowly in the forest, but more rapidly on the prairies. In the prairie region the bees were confined to the narrow belts of trees along the streams, and thus extended their range even faster because available habitations were limited to hollow trees near the water courses.

Tales of early travelers have much to do with the hunting of bee trees by both white men and Indians. Irving, in both the "Tour on the Prairies" and "Adventures of Captain Bonneville," gives extended accounts of the hunting of bees along with the hunting of the buffalo and other game common to the time. (Pages 554, November Journal.)

The present day visitor to Nebraska, Kansas and Oklahoma can hardly imagine that within the lifetime of old men now living these vast areas were but waving meadows of wild grass, on which fed teeming thousands of wild buffalo, hunted by wild Indians who lived in tepees made of the skins of the animals. These prairie Indians had no permanent abiding place, but moved their lodges from time to time in pursuit of the bison, which furnished food, raiment and household equipment.

Every part of the animal was used for some purpose. From the skins was made clothing, shelter, bedding and lariats. The meat served as the principal means of subsistence. The horns were made into ladles and spoons, and glue was made from the hoofs. From the buffalo herds the red man secured nearly every necessity and some of the luxuries which his standard of living required. When the incoming whites destroyed the buffalo, the Indian was reduced to poverty and want and found great difficulty in adapting himself to the conditions which the changing times brought about.

Now the white man and the bees have taken possession of the land. The bees live in hives instead of trees. Bison are seen only in parks, where they are kept for the satisfaction of the curious visitor. The red man finds his only chance of survival in following the white man's way, and slowly and painfully is acquiring something of the "pale face" civilization.

Leroy Churchman gives a glimpse of the western spirit in a letter to the writer, in which he says of western Kansas that the country is new and folks still have time to be human. He laments at the same time that the sod houses have all disappeared and that folks out there soon will be getting into a big hurry along with the rest of us. F. C. P.

Honey For Sale

In our November number we offered to list the honey of any of our subscribers who were finding difficulty in reaching a satisfactory market. The idea was to publish a leaflet listing the quantity and kind and to send it to as many buyers as possible. Only four beekeepers responded:

Edwin Krinke, Bay City, Wisconsin, 2000 pounds white clover-basswood in ten-pound pails.

A. E. Ananson, Windom, Minnesota, two tons sweet clover extracted, in sixty-pound cans.

Melvin Mattison, Route 1, Plummer, Minnesota, 1000 pounds white clover comb honey in 24-section shipping cases.

E. G. Haas, Cook, Nebraska, thirty-five cases, twenty-four sections each, comb honey, sweet clover and heartsease.

Since so few beekeepers have manifested an interest in the matter, it has been decided to drop it for the present.

Honey Sponge Cake

1 cup honey.
1 cup flour.
5 eggs.
Pinch of salt.

Cream yolks and honey together thoroughly. Beat egg whites to a froth and add to the creamed yolks, honey and flour.

Bake in a loaf pan, or chimney pan.

Meetings and Events

Winter School for Beekeepers in New York

A short course for New York State beekeepers will be held in the College of Agriculture, at Ithaca, New York, during the week of January 24-29, Monday through Saturday.

Monday will be devoted to wintering; Tuesday to spring management and swarm control; Wednesday to geology, soils, and pollination; Thursday to the flora of New York State, nectar secretion, and regional differences. Friday will be marketing day, with an open forum conducted by experts from the Department of Farm Management, a marketing expert from Washington, D. C., Mr. Clay, and by several New York State beekeepers. Saturday forenoon will be devoted to bee disease work, with the session closing in plenty of time so that all may get home that night.

The University community offers plenty of facilities for housing all that may come.

There will be something good each evening. Monday evening there will be a lecture on Indian Life by Dr. Earl Bates; Tuesday evening, an address on European Agriculture by A. R. Mann, dean of the College of Agriculture; Wednesday evening, address by Dr. E. F. Phillips and get-acquainted meeting and entertainment by the Cornell Apis Club; Thursday evening, an address by Dr. L. O. Howard, chief of the Bureau of Entomology, Washington, D. C.; Friday evening, the usual dinner of the Hon-E-B Club, Charles Stewart, King Bee. Always lots of fun this night.

Iowa Beekeepers' Short Course

The annual beekeepers' short course in Iowa will be held this year during Farm and Home Week. The dates of the course are February 1-4; that means four days of special instruction in the paramount problems in beekeeping. We expect to have as special speakers Prof. R. H. Kelty of Michigan, G. H. Cale of Hamilton, Illinois, and J. G. Jessup of Council Bluffs. These men will be supported by the regular staff to present the strongest possible program for visiting beekeepers. Two days will be devoted to problems of crop production and disposal. One day will be spent on diseases and pests of the apiary. The last day will be devoted to subjects closely related to beekeeping. There will be four lectures each day, starting at 9 o'clock, and laboratory demonstrations covering the work of the day from 2 to 4 o'clock.

The general features of Farm and Home Week should prove very attractive, and, of course, with so many lectures in process each day, it is possible to get information on any subject relating to agriculture. Those who get the most out of the course are those who attend every lecture, but all cannot do that, so come prepared to attend most of the lectures and fill in the time with other lines of work.

North Dakota Offers Beekeeping Course by Mail

Recent announcement has been made by the North Dakota College of Agriculture that correspondence courses in beekeeping, as well as fruit and vegetable growing, farm crops, dairy, poultry and other farm subjects, will be given. All courses are free except for an incidental enrollment fee of $2.50 to cover cost of preparing and mailing lessons. Over one hundred persons took advantage of the beekeeping course last year. Those interested should address the College of Agriculture, Fargo, North Dakota.

Manitoba Short Course

The fifth annual short course in beekeeping will be held at the Manitoba College of Agriculture, at Winnipeg, January 17 to 28. Professor Mitchener and L. T. Floyd will give the lectures on beekeeping subjects, while other members of the college faculty will take up closely related topics in the field of botany, chemistry, bacteriology, etc.

Those interested should address the college for particulars.

North Dakota Convention and Short Course

A combined convention of beekeepers and short course is announced to be held at the College of Agriculture at Fargo, North Dakota, from January 31 to February 2. L. T. Floyd, Provincial Apiarist of Manitoba, and E. R. Root, of Ohio, are speakers from outside the state.

Kansas Meets February 8-9

The annual meeting of the Kansas State Beekeepers Association will be held February 8-9. The first day will be held at Topeka. The second day it will be held at the State Agricultural College at Manhattan. A splendid program has been arranged for both days.

George Pratt, Secretary.

New Jersey Convention

The annual meeting of the New Jersey Beekeepers' Association will be held January 13 and 14, Thursday

and Friday. Besides the usual business meeting, there will be much of interest on the program, including the following speakers: Harold Horner of Mt. Holly, Miss Elizabeth White, New Lisbon, Miss Doormann, New Brunswick, Warren W. Oley, Bridgeton, J. N. Becher, Morganville, H. R. Cox, New Brunswick, J. Field Garretson, Bound Brook, John Conner, Caldwell. E. G. Carr will give demonstrations to keep the meeting lively.

The National

The American Honey Producers' League will hold its annual convention at the Jung Hotel, New Orleans, La., January 25-27, 1927. A good program is being prepared and speakers of national reputation will address the meeting.

Among the important questions to be considered are: A better system of marketing, better distribution, a rational mode of advertising, national and state legislation, transportation, and the question of quarantines. The meeting will afford an opportunity for bee men of the United States to get together and solve some of the problems due to differences of opinion. Some amendments to the league constitution have been suggested. An improved League Bulletin is contemplated.

An organization representing nationally the honey producers of the United States is necessary in promoting the interests of beekeepers. No such organization can function properly unless it receives adequate financial and moral support of those whom it seeks to serve. The cost to the individual is small, but with proper support, benefits will accrue to every beekeeper in the land. As a business proposition, the honey producers of the United States cannot afford to neglect the solution of these problems of national import, and every beekeepers' association should affiliate and be represented at the coming convention by one or more delegates.

E. S. Miller, President.

The Ohio Meetings

The annual convention of the Ohio Beekeepers' Association will be held at Columbus, February 2, 3 and 4, in connection with the short course being given at Ohio State University under the direction of W. E. Dunham, instructor in beekeeping.

Speakers will be E. F. Phillips, George H. Rea, E. R. Root, W. E. Dunham, James S. Hine, Fred W. Muth, Fred Leininger, F. B. Moore, Charles N. Poling, Carl Hurst, and C. A. Reese.

The annual banquet will be held

(Continued on page 38)

Meetings and Events

(Continued from page 36)

on Thursday evening, and, following this, Mr. Thomas Graham will entertain with a program of Scotch ballads. Mr. Graham has been heard a number of times over Station WEAO, and is in demand as an impersonator of Sir Harry Lauder.

Following the successful Root-Langstroth Memorial meeting last September, this will doubtless be the largest and best winter meeting ever held by the organization. All persons interested in beekeeping are cordially invited to attend.

Florence Naile, Secretary.

The Best Kind of Honey Publicity

The American Honey Producers' League, through its president, was instrumental in having honey and its uses broadcasted from radio station WLS, Chicago, at Homemakers' Hour, every day during Honey Week. Suitable material regarding honey as a food was furnished and the subject could not have been better presented than it was by Mrs. Ellen Rose Dickey, home adviser, who has charge of broadcasting at that hour. In consequence, the league has received hundreds of requests from housewives for honey booklets. The booklets are being sent out over an area covering several states.

In response to a request from the American Honey Producers' League for radio publicity for honey, Mr. Sam Pickard, chief of U. S. Radio Service, states that the suggestion is a good one and that information will be asked of authorities in regard to the uses of honey, the information to be used in Housekeepers' Chat, a daily service which goes out from some fifty broadcasting stations.

Iowa Short Course at Ames

On February 1, 2 and 3 there will be a short course for beekeepers at the Iowa State College of Agriculture, at Ames. This yearly feature has come to be an event among Iowa honey producers, and the present program looks promising enough to draw a good crowd.

The plan used the past two years will be used again of having half the day for lecture and half for demonstration. Thus things are kept lively, with no time for sleep.

The subjects include comb and extracted honey production, requeening, marketing, and foulbrood treatment. On the staff are J. G. Jessup, of Council Bluffs; A. D. Worthington, F. B. Paddock and Dr. O. W. Park, of the college; R. H. Kelty, of Michigan, and G. H. Cale, of Illinois.

Old Maid Queens—Do They Make Good Mothers

By Eugene Holloway

Beekeepers in general believe that if a queen goes longer than fifteen days without meeting a drone, the chances for her to mate and develop into a normal queen are few. But a very old saying is, "There are exceptions to all rules," and I know beyond a doubt that there is at least one exception to this rule.

On Feb. 27 we began the regular job of overhauling the apiary. Some of the queens had been laying long enough to have emerging bees. One strong colony's queen had become a drone layer. This colony had quite a brood nest, the most of which were drones, and some of those were also emerging. We had already been informed that we could not get queens from the South for several weeks, on account of weather conditions and a heavy demand for queens to go with combless packages. Of course, most bee men would have united the colony with a weak hive, but I have always been strong for experimenting, so we killed the drone-laying queen and gave the colony a frame of young brood from another hive. In due time we again examined the now queenless colony, and to our surprise found that they had not constructed queen cells on the comb which we had given them, but had built a large number on one of their own combs, which we thought contained only drone larvæ. But after opening several of the queen cells, we decided maybe a few of them contained female larvæ. On March 13 a fine looking virgin emerged from one of the doubtful cells. But about the time this virgin was due to mate, the weather turned so cold that the workers could not fly, not to mention queens or drones. April 7, twenty-five days after the queen emerged, was the first day warm enough for drones to fly again. I was out in the apiary early that afternoon, to see if we had lost any colonies during the cold spell. As I was watching the drones flying from this hive, I got the glimpse of a queen entering the hive. But I thought at first I must have been mistaken, but she came out twice more after that. Of course, I expected this queen to be another drone layer, but allowed her to go on. April 19 we examined the colony, and the queen had begun to lay. By this time the colony was beginning to weaken, as most of their worker bees had passed through the winter months. So this queen filled all space in the cluster with eggs very soon, and came clear out on combs that had practically no bees

on them, and filled them with eggs. The colony built up at a rapid rate and was in tip-top shape for the honeyflow. It went right on through the season without any thought of swarming, while 90 per cent of the other colonies had to be treated for swarming.

At the close of the harvest, September 10, this colony had 150 pounds of honey to its credit. This queen is still on the job, October 27, with a strong hive of young bees to go into winter. She has laid very few drone eggs during her busy life of nearly seven months. Can you beat it? Oklahoma.

(Those of our readers who have Huber's "New Observations" have noticed that he puts the final limit of a queen's mating normally to twenty days, stating that whenever he prevented a queen from mating for twenty-one days or more she failed to produce any fertile worker eggs. His experiments were so repeatedly made that one must give them credence. But there are very certainly exceptions to the rule, and the statement above proves it. It is a question in our mind whether Huber actually saw a mated queen produce only drones. We are inclined to the opinion that the queens to which he refers as mated after twenty days were not mated at all, but simply lost the desire to mate and went to laying. In Huber's time, brood from an unmated queen appeared impossible.—Editor.)

A Sweet Mess

A farmer friend has been coaxing me to come out and extract some honey from his house, not with an extractor, but by hand. Yesterday I went out, cut away the siding from the base sill up to seven feet, and there were combs of honey between the joists the full height, nearly eight feet long. Can you beat that? The colony had been there two years and there was about twenty-five pounds of table honey and sixty pounds of old honey and wax. I received the old honey and wax for my trouble, plenty thanks. B. C. Hall.

Another "Gay" Beekeeper

Friends of Mr. and Mrs. Gerald Gay, of Beacon, Iowa, take great pleasure in the fact that the recent arrival in their family of an eleven-pound boy, Earl Estil Gay, December 7, gives future promise of a most enterprising addition to apicultural ranks. However, our delight is not near as bountiful as that of the parents.

Crop and Market Report

Compiled by M. G. Dadant

Evidently there is nothing to fear from the honey crop left in the producers' hands in the eastern half of the country.

Reports from the entire Southeast are to the effect that the honey is cleaning up nicely and there is not over 25 per cent of a crop left on hand. In Texas, there is perhaps a little more than this, and it is a question whether all honey will move before the new crop. Possibly the poorer grades will still be on hand unsold. The shortage of the cotton crop has undoubtedly had a great deal to do with the buying power of that state, and this, of course, has held back the sales of honey.

In the north central and New England states, as well as along the Atlantic seaboard, honey seems to be cleaning up nicely, there not being over an average of 25 per cent left in the hands of the producers. This, of course, includes some states which have as high as 40 per cent left on hand, but all of whom were expecting to clean up their crop easily before the new crop comes on.

In fact, we might say that our reporters, in a large number of instances, stated that they not only figured on cleaning up their own crop of honey, but there was a possibility of selling additional amounts, or at least they would be out far before the new crop of honey was put on the market.

In the intermountain section the amount left on hand runs a little higher, in many instances running as high as 50 per cent. Apparently all, or practically all, of the Idaho honey has moved, the producers being willing to take a smaller price than are those of Montana and Colorado. In fact, many carloads were sold at 6, 6½ and 7 cents, whereas in Montana and Wyoming, also Colorado, there are numbers of producers who are still holding their crop and expect to get an 8-cent price before March 1.

Utah is also holding a quantity of honey, probably half of their crop, unwilling to sacrifice at the low price offered by other producers.

Washington and Oregon had a small crop this year and are fairly well cleaned up, and the crop of California is now pretty well out of the producers' hands, with some honey coming into southern California from the intermountain territory.

All in all, there is not probably an average of over 30 per cent of the honey left in the hands of producers, which is not a bad sign in itself.

JOBBING PRICE IMPROVING?

In the New England states it is apparent that the prices are improving somewhat, but in practically all other sections of the country, except the intermountain and western sections, there is no apparent change in prices. This is due to the fact that any scarcity of local honey in the Central West has been replaced by the shipment of stocks from the West, so that, in the first place, early in the fall prices were dropped down by the influx of this honey, and have so been maintained.

In the intermountain territory, however, and on the Pacific seaboard we see some signs of an improvement in honey demand, and naturally this will soon be reflected in the price of honey. We have record of one carlot of honey in Iowa being sold at 9 cents a pound, and several in the West have sold at 8 and 8½ cents.

Arizona is having much difficulty in disposing of their crop, being offered only on the basis of about 6 cents per pound or less for amber honey. All in all, we believe that there is a very apparent improvement in jobbing prices, or at least a reflection which will in time improve the jobbing prices of honey. Undoubtedly the dealers are not so well stocked as a year ago.

PRICES

The wide variety of jobbing prices is somewhat of a surprise which goes to show the difficulty in judging at all of the market. As said previously, the prices of carlot movements of honey have varied all the way from 6½ to 9 cents per pound during the past month, which should not be so. The honey in both instances was practically of equal quality, and sought the same eastern market.

In the New England states we find jobbing prices considerably higher than in the Central West. A number of sales have been made at 9 cents f. o. b. Chicago, and many others in less than carload lots at 10 cents f. o. b. shipping point.

This, of course, compares very favorably with prices in the intermountain territory, ranging from 6 to 6½ cents, 7 and 7½.

WILL ALL HONEY MOVE?

There is no doubt whatever in the minds of producers in the East, Southeast and Central West, but what practically all of the honey will be moved out and sold previous to the next crop.

Even in the plains states and intermountain territory, there seems to be a feeling that there is no difficulty in moving the honey; the question only is of the price to be obtained. Many producers are stating that they are going to carry over this year's crop of honey if they do not get prices which are commensurate with cost. Undoubtedly, at any rate, there will not be as much honey carried over into the new crop year as there was during the season just past, and this, of course, bodes well for the honey prices at the latter end of this selling season.

Although there is no way to predict what the ultimate outcome will be, because business conditions themselves largely help to determine the demand for such products as honey, still it is the writer's idea that there will be an appreciable strngthening of the honey prices over the low prices which have been obtained during the last ninety days.

In the Canadian provinces, the demand this year will probably clean up all of last year's carryover as well as this year's smaller crop without any difficulty. In Ontario the producers' association is selling their honey at 1 cent per pound higher than last year's prices, basing this solely upon the smaller crop.

Manitoba still is able to sell all of her honey in the province without seeking outside markets. Apparently this will be the case for a year or two yet, at least until this province gets to producing a much larger amount. The same is true of other western provinces of Canada.

PACKAGE BEES AND QUEENS—Three-banded Italians for April and May.
H. E. Graham,
Box 666, Cameron, Texas.

SEE my display ad, page 39, before buying elsewhere. We will save you money and deliver your bees when you want them.
Cloverland Apiary, Hamburg, La.

PACKAGE bees, nuclei and queens. We solicit your patronage on the merits of our quality, service and price.
Crenshaw County Apiaries, Rutledge, Ala.

PACKAGE bees 90c per pound in 10 two-pound package lots. Peterman's select Italian queens: 1, $1.00; 6, $5.50; 12, $10.00; 25, $20.00; 100, $75.00. Delivery starting April 1, 1927. Safe delivery and entire satisfaction guaranteed.
H. Peterman, Lathrop, Calif.

FOR SALE—Package baby bees and Italian queens. Write for prices and discount on January orders.
Benson & Walton Bee Line,
612 Hill St., Galena, Ill.

PACKAGE bees and queens without delay. Output 2,000 packages and 8,000 queens per month. No delay if orders are booked early. Special prices on quantity orders. Write for prices.
The Citronelle Apiaries,
Citronelle, Ala.

GOLDEN Italian queens and nuclei (or package bees) for 1927; the big, bright, hustling kind (the kind that gets the honey). Satisfied customers everywhere. Untested, $1.00 each; 6, $5.00; 12, $10.00; 100, $75.00. Tested, $2.00 each. Two-frame nuclei or two-pound package with queen, $4.50 each; ten or more, $4.00 each. Safe arrival guaranteed. Health certificate furnished.
E. F. Day, Honoraville, Ala.

BOOKING orders for spring delivery. I have one of the best packages offered: two frames with brood and honey, two pounds bees, and one untested queen introduced. One to four packages, $6.00; over five packages, $5.00, f. o. b. here. Hoffman frames, some built on Dadant wired foundation. Twenty per cent books order. All bees shipped with health certificate.
L. J. Bond, Big Bend, La.

BRIGHT Italian bees and golden queens. Past season we shipped packages into 32 states and queens to three foreign countries. Have never had a dissatisfied customer. Have received many reports as "Finest lot of bees have ever received." "Bees are better than I expected." Write for prices; they're reasonable. Season begins April 10. Bees shipped from New Orleans.
M. Stevenson, Westwego, La.

LET me know your wants and quote you on your bee and queen requirements for 1927. Circular gladly sent on request.
R. V. Stearns, Brady, Texas.

PACKAGE BEES—April and May delivery. Write for prices. Our stock will please you. The Crowville Apiaries,
J. J. Scott, Prop., Crowville, La.

TOWNSEND & CAMOS, Loreauville, La., successors to J. P. H. Shaw & Co., offer some of this world's famous strain of bees in packages for next spring delivery. Absolutely pure three-banded stock. Say how many you can use and we will be pleased to quote a very low price, considering quality of stock.

AM BOOKING orders 1927 delivery for our famous grey Caucasian queens and golden Italians, reared in separate yards. Every precaution taken for pure mating. Caucasian breeders are daughters of 1926 imported mothers. Pure mating, safe arrival guaranteed in U. S. A. and Canada. Write for prices and circular.
Tillery Bros., Greenville, Ala., R. 6.

BEES AND QUEENS—Best and cheapest. Write for large catalogue.
The Stover Apiaries,
Tibbee Station, Miss.

BEES AND QUEENS for spring delivery. Quck service and satisfaction guaranteed. Twenty per cent will book your order. Three-banded Italian bees and queens. Try them. They are gentle and good honey gatherers. One 2-lb. package and untested queen $3.50. For additional pound add $1.00. Delivery begins April 15.
David Domingue, Erwinville, La.

CARNIOLAN QUEENS—Will produce several hundred queens of exceptional stock in 1927. Shipping date commencing April 1. Prices $1.30 each.
C. H. Smith, Marianna, Fla.

LEATHER COLORED ITALIAN QUEENS—$2.00; after June 1, $1.00. Tested, $2.00.
A. W. Yates,
15 Chapman St., Hartford, Conn.

THRIFTY Caucasian bees and queens for 1927. Packages or nucleus headed with daughters from our direct imported or our own select breeders. Let us figure with you on your needs.
Bolling Bee Co., Bolling, Ala.

FOR SALE—Italian bees and queens: 2-lb. packages of bees with queens, $3.50 each; 1-lb. package with queens, $2.50. Queens bred with the greatest of care.
O. P. Hendrix, West Point, Miss.

EARLY package bees and highest grade Italian queens. Our only business is Bees and Queens. We do not produce honey, deal in supplies or sell off a few old bees in the spring as a side line. Our colonies are worked exclusively for the production of young, vigorous, healthy worker bees for packages. Colonies are drawn on about every two weeks from March 20 to June 20. Two- and three-pound packages. Fifty pounds or more $1.00 per pound. Select three-band Italian queens $1.00 each. Ten per cent deposit will book order and reserve shipping date. Large orders booked in advance will receive special prices. We guarantee both safe arrival and satisfaction.
J. E. Wing, Cottonwood, Calif.
Most Northern Breeder in California.

BEES AND QUEENS—For spring delivery. Prompt delivery and satisfaction guaranteed. Three-band Italian queens and good young bees. One 2-lb. package of bees and untested queen, $3.50; twenty-five 2-lb. packages of bees and untested queen, $3.25 each; one 3-lb. package of bees and untested queen, $4.50; twenty-five 3-lb. packages of bees and untested queen, $4.25 each. Liberal discount on early orders.
W. H. Moses, Lane City, Texas.

PACKAGE BEES—See larger ad on page 35 or write for prices.
John A. Williams, Box 178, Oakdale, La.

BOOKING FOR MAY DELIVERY 1927—Try Dalton's introduced, laying-enroute to you queens in packages. Save the risk of introducing her, gain the days it takes for her to get to laying and make you brood to emerge into bees. Two frames of honey brood and bees, well covered, two additional pounds shaken in, a good young Italian queen on those combs laying before she starts to you. Price f. o. b. Bordelonville, $6.00 per single package; 20 per cent cash books your order. Frames, Standard Hoffman, largely built on Dadant's Wired Foundation; bees and queens, light Italians, called Goldens. Health certificates on every package. Remember that last season I rejected more orders after filling to capacity than I accepted. Satisfied customers for reference in most states.
Jes Dalton, Moreauville, La.

EAT KELLOGG'S CEREALS BECAUSE HE IS BOOSTING HONEY.

BRIGHT American Beauty Italian Bees and Queens—April 10 to June, 2-pound package with queen, $4.00; 3-pound package with queen, $4.75. Special, 2 pounds on frame emerging brood and honey, with queens introduced and laying, $5.00. Untested queens $1.25. Write for quantity prices. Most prolific strain in America.
Tupelo Apiaries, J. L. Morgan, Prop.,
Apalachicola, Fla.

I AM booking orders for May delivery on Caucasian three-frame nuclei; also queens. Yards inspected for protection of disease.
Peter Schaffhauser, Havelock, N. C.

GOLDEN THREE-BANDED and Carniolan queens. Tested, $1.00; untested, 75c each. Bees in 1-pound package, $1.50; 2 pounds, $2.50; 3 pounds, $3.25. Safe delivery guaranteed. C. B. Bankston,
Box 65, Buffalo, Leon Co., Texas.

TESTED QUEENS—$1.00 each for fall and winter. I mail queens every month of the year. D. W. Howell, Shellman, Ga.

FOR SALE

FIFTY COLONIES—Good condition, two-story, eight-frame hives. Price $10.00 each. Philip Smith, Ottawa, Kans.

35 BARRELS soiled sugar for bee feed; 300 cases good used honey cans.
Winkler Honey Co., Joliet, Ill.

FOR SALE—100 colonies of bees in patent stands. Price $4.00 per stand, f. o. b. McBride, Mo.
O. J. Preston, McBride, Mo.

FOR SALE—Roadside honey stand; average sale $10.00 a day; 1½ acres land, bungalow; Italian bees. Owner leaves country. Price $6,000. Brown's Apiary,
Cape May Court House, N. J.

BEES ON SHARES—Experienced beekeeper with hundred colonies in good Manitoba location would like fifty to hundred colonies on shares.
B. A. Tedford, McCreary, Man., Can.

FOR SALE OR TRADE—Will trade 1927 model Parmak radios for honey, or what?
Edwin Collins, East Sixth Ave.,
Emporia, Kans.

FIFTY ACRES land in fireweed belt, 170 colonies bees in winter cases, enough supplies to run 200 colonies, Lewis-Markle power extractor, three storage tanks, 7000-pound capacity. This apiary produced 20,000 pounds surplus honey this year.
J. R. Heilman,
Cowlitz Co., Stella, Wash.

ENTIRE bee equipment, new hives, supers, etc., for sale on account of death of owner. Cheap. Details furnished by
H. M. Bacus,
1203 Norton St., Alton, Ill.

FOR SALE—Between 400 and 500 colonies bees, 31 acres land, in the Black Belt of Montgomery county, located on main highway. Apply to
M. S. Nordan, Mathews, Ala.

FOR SALE—Pure sweet clover honey in carloads or in single cases. Let us know your needs. Dakota Sunshine Apiaries,
Amenia, N. D.

FOR SALE—Comb honey shipping cases. Several thousand, holding 24 sections 4¼x4¼x1⅞, single tier, glass front. Used once, like new. 25c each. Two 60-pound cans to case, 50c a case, F. O. B. Chicago.
A. L. Haenseroth,
4161 Lincoln Ave., Chicago, Ill.

FOR SALE—We are constantly accumulating bee supplies, slightly shopworn, odd sized, surpluses, etc., which we desire to dispose of and on which we can quote you bargain prices. Write for complete list of our bargain material. We can save you money on items you may desire from it.
Dadant & Sons, Hamilton, Illinois.

HONEY AND BEESWAX

FOR SALE—Carload finest white extracted honey. Joe Wadleigh, La Junta, Colo.

WATER WHITE white clover honey; finest quality, excellent for bottling.
Irvin A. Stoller, Latty, Ohio.

BEE-DELL quality light amber extracted honey in new 60-pound cans, two cans to case.
Bee-Dell Apiaries, Earlville, N. Y.

FOR SALE—Honey in new 60-pound cans, two to the case. Water white clover, as good as can be had at any price, 10c a pound f. o. b. Gordon, Neb. Light amber clover, of splendid flavor and body, 9c a pound f. o. b. Montgomery, Ala. Five-case lots up, 1c a pound less.
M. C. Berry & Co.,
Box 697, Montgomery, Ala.

FOR SALE—300 cases of northwestern Ohio clover honey at reduced price; also fancy chunk honey in 2½-, 5- and 10-pound pails. Prices on request. Sample 15c.
F. W. Summerfield, Waterville, Ohio.

FOR SALE—Sweet clover and goldenrod honey of the very finest quality; new cans and cases. Write for prices.
Martin Carsmoe, Ruthven, Iowa.

FOR SALE—Large stock of used ten-frame equipment. No disease. Write for price list. State kind wanted.
Faulconer Bros., Lewistown, Mo.

Burr Combs

Watch Your Step, or Don't Stop Your Watch

H. C. Dadant

It is said that the best way to travel is to not try to go faster than the carrier. Pushing on the lines or arm rest with the hands, or the floor with the feet, doesn't help the driver to get one there with comfort. Do not try to go faster than the train schedule. The speed of the world keeps us going and things change fast enough. All the slowest of us need is a little energy, while most of us need good brakes. The automobile and radio have set a pace we are obliged to live in. A slow, lazy person is hard to find among the younger generation today.

The value of education or special training is much more apparent to all people than it was a generation or two ago. A good job is automatically associated with a sacrifice of time and earnest effort.

At school, thirty years ago, a common expression among my schoolmates was: "I hate that study. What's the good of geometry, anyway?" I recall a cold, rainy recess, a day when even a high school class didn't care to frolic during a fifteen-minute interval out of doors. The geometry class had just been dismissed. Our good old-time professor was one of the instructors I shall always remember. When a problem didn't "go over" with us he always had another way to explain it. His genial manner and resourcefulness comes back to me frequently. One knotty problem that day was listed to be carried over for the next recitation period. Instinctively we gathered around the blackboard and the professor, as he joined us, volunteered to prove there was no such a thing as motion. A line was drawn between two points and then a point located half way along this.

"Before going all the way, it is necessary to travel half way, isn't it? And before going that distance, half the half must be covered. Before you can go that far, don't forget you must first go half way." Since the half-way distance became shorter and shorter, we soon approached no motion. So the professor had us "going" shorter and shorter distances, although he had gone all the way when he drew the original long line.

This suggests an idea worth remembering: Don't go all the way before half way is well covered. It is well to move slowly with speed, but move fast slowly first. There is always something more to do and another day coming.

But some things are more easily proved than the "no motion theory." When a student denied motion, the professor got up and walked, to prove that there is motion.

A "no speed limit" has been advocated for automobile traffic on our new highways. Another man proposes enforcing a speed of twenty-five to forty miles per hour, according to the location and traffic. Which will you have? The pedestrian has been shifted from right to left, facing the traffic, so that he can see death coming, which is much more pleasant than being taken unawares. He is still in greater danger than the man who tries to hive a swarm of Cyprian bees, without veil, gloves or smoke. With those Cyprians, if you cut the limb and carry the swarm carefully to the alighting board without shaking it, they will probably go in without inflicting too many stings.

Well, we are only killing between 25,000 and 30,000 people annually with our autos; but it is increasing. They reported that 2600 people were killed by autos in October, 1926. The pedestrian is considered by many as a nuisance. Most of our young fellows would order him off the street altogether.

An old lady of our acquaintance had her ankle broken in falling against the curb at a street corner while she was trying to escape being run over by a fellow who was in a hurry. Who should have paid her doctor bill? Was she to blame for being on the street at all? Were not the pedestrians on the street first? Has the auto acquired all the street rights?

The aeroplane is the next invention, and it surpasses our bees. A bee can fly a mile in two minutes; the aeroplane flies two miles in a minute. So the poor bee is distanced. The next invention will be a machine to draw the honey out of the flowers by air force. Will I have to give up my bees then?

Not long ago a caller told me a perpetual motion machine was to be soon completed, located only twenty miles away. I must have appeared slow to interest, as details of the apparatus were not learned. The German artillery came nearer to the place where enduring motion could exist, when the seventy-mile projectile was delivered four miles above the clouds. It traveled fast and far in the rarified air.

There have been frequent futile attempts to organize an expedition of ladies for the climb to the top of Mount Everest and to the moon by airplane? The whole trouble comes not from lack of speed, but of atmosphere. Sound waves don't carry up there.

Let us not give up our search for perpetual motion. The sun keeps shining, the wind blowing and the bees humming. One generation is supplanted by another. What we learn is accumulated for a greater use by those coming after us. "The higher we go, the nearer we attain a position where perpetual motion can be expected," said the aviator.

That a lot can be done by slowing down a bit has been discovered by some of Uncle Sam's efficient observers in Washington. Plants can be brought to maturity much sooner by shortening their daylight period artificially, they say, and proved it by putting some in the dark at 4 p. m. Goldenrod blooms in August in Canada, and down here a month later. Acclimated, we say, but there are shorter days here and longer days there, in summer.

One may gain by speeding up or slowing down. The best depends upon the application.